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ABSTRACT

The document presents the final report of the Assessment and Improvement of Related Services (AIRS) Project, an effort to assess the impact and effectiveness of special education related services in Hawaii. Each of the four project objectives focused on accomplishment of one of the evaluation types specified in the Context-Input-Process-Product (CIPP) model. Among seven areas of investigation were: (1) statistics on turnovers and vacancies in related service professional positions in Hawaii; (2) perspectives of administrators on related services; (3) perspectives of therapists who had left their positions; (4) and the extent to which speech/language therapy, occupational therapy, and physical therapy were provided as related services. Among findings were that a high rate of turnover and job vacancies exists; that problems exist in implementing guidelines and/or eligibility criteria; and that consultation was perceived to be an appropriate service delivery model. In addition, chapters provide information on: the historical background of the AIRS Project; statistics on position vacancies, speech/language therapy, occupational therapy, and physical therapy; the AIRS Futures Conference; views of administrators, service providers, and special education teachers; and an evaluation of the DISTAR language program. Among eight appendixes are interview and questionnaire forms used in the study.

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FINAL REPORT

ASSESSMENT AND IMPROVEMENT OF RELATED SERVICES (AIRS) PROJECT

August 1986

Prepared by
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A. EXECUTIVE SUMMARY

The Assessment and Improvement of Related Services (AIRS) Project was established under a Cooperative Agreement between the U.S. Department of Education and the Hawaii State Department of Education to assess the impact and effectiveness of special education related services in Hawaii. A secondary intent of the project was to produce evaluation information that would assist decision makers to provide effective services to special education students in Hawaii. A decision-oriented evaluation model--the Context-Input-Process-Product (CIPP) model--served as the evaluation framework of the Project.

The four original objectives of the project were all accomplished, resulting in the publication and dissemination of 10 Technical Reports and the sponsorship of a Futures-Oriented Planning Conference. Each objective revolved around the accomplishment of one of the four types of evaluation specified in the CIPP Model. The first objective resulted in a general, systematic context evaluation of environmental forces that have an impact upon the special education related service system. Input evaluation was the basis of the second objective in which a descriptive study of the nature, frequency, and duration of related services was conducted. Process evaluation, the third objective, was essentially a review of how services were provided. Finally, product evaluation focused on an examination of a direct instruction language program utilized by a number of speech pathologists in Hawaii.

Areas of investigation included (a) statistics on turnovers and vacancies in related service professional positions in Hawaii, (b) perspectives of administrators on the effectiveness of related services and factors that account for high rates of turnovers and vacancies in personnel positions, (c) perspectives of therapists who had left their positions on various aspects of their employment and reasons for leaving their positions, (d) the extent to which speech/language therapy, occupational therapy, and physical therapy were provided as related services in the public school system to special education students, (e) evaluations conducted by related service providers to determine student eligibility for services, (f) perspectives of related service providers and special education teachers on the quality of consultation services provided by related service professionals to special education teachers, and (g) the effectiveness of a direct instruction program (DISTAR Language) in improving the oral language skills of elementary learning disabled (LD) and mildly mentally retarded (MIMR) students.

The past 6 years have witnessed chronic turnover rates and vacancies in related service provider positions in Hawaii. Administrators most frequently attributed difficulties in filling positions and retaining employees to a low salary scale. Therapists who had left their positions most frequently cited frustration with the recruitment/hiring process, dissatisfaction with a low salary scale, and the existence of a competitive market in the private sector as primary reasons for leaving their positions.

Almost 2300 (22%) special education students in 1985 received speech/language therapy as a related service in Hawaii. Learning disabled students accounted for over one half of the students receiving speech/language as a

related service. Approximately 750 students were eligible to receive physical therapy (PT) as a related service. Severely multiply handicapped students were the largest contingent of PT recipients. Approximately 1170 students were eligible to receive occupational therapy (OT) as a related service, most of whom (45%) were learning disabled. Review of OT statistical data revealed that the duration of OT sessions was dependent on the type of treatment and student handicapping condition.

Activities initiated under process evaluation identified problems associated with guidelines and/or eligibility criteria for related services. Flexibility in following guidelines combined with different philosophical orientations among therapists may result in significant variability in therapist recommendations regarding the delivery of related services to students.

Consultation was perceived by related service providers and special education teachers to be an appropriate service delivery model. However, training at the preservice level and/or inservice level was also felt to be necessary to assist therapists to provide more effective consultation services.

Typically, the gap between special education students and regular education students in terms of their aquisition of skills tends to widen over time. Contrary to this trend, quotient scores of students in a direct instruction language program suggest that their rate of aquisition of oral language skills in the 1 year interval between pretest and posttest appeared to have been commensurate with the rate expected of regular education classmates. Further evaluation of the program is needed before more definite conclusions regarding its effectiveness or impact can be made.

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I. HISTORICAL BACKGROUND TO THE AIRS PROJECT

The Assessment and Improvement of Related Services (AIRS) Project was 1 of 10 Cooperative Agreements between the United States Department of Education and State Education Agencies funded in Fiscal Year 1984 to conduct evaluation studies in special education. The common objective of all Cooperative Agreements under the State Educational Agency/Federal Evaluation Studies Program was to assess the impact and effectiveness of programs under the Education of the Handicapped Act, as amended by P.L. 98-199.

The focus of the evaluation study proposed by the AIRS Project was limited to an investigation of related services provided by the Hawaii State Department of Education and/or in agreement with the Hawaii State Department of Health, including the specific services of speech/language therapy, physical therapy, occupational therapy, and mental health services. A secondary intent was to produce, at the local and state level, evaluation information that would enable decision makers in both the educational and health service communities in Hawaii to provide effective services to special education students. This intent (one might term it an evaluation philosophy) can easily be discerned from a review of the language contained in the stated objectives of the Project. Fundamentally, information gathered from the Project studies was intended to have a national as well as a state/local impact. This national impact would be reflected in a more comprehensive conception at the Federal level of the impact of programs under the Education of the Handicapped Act. The state/local impact would be reflected in the day-to-day decisions of administrators and service providers.

Four objectives of the AIRS Project were proposed and pursued.

1. Given a general systematic context evaluation of environmental factors that impact on the special education related service system, State and District level decision makers will have adequate information to make effective decisions regarding the improvement of related services.

2. Given a general systematic input evaluation (descriptive evaluation of the present structure of services including nature, frequency, and cost of services by handicapping condition and district), State and District level decision makers will have adequate information to make effective decisions about: distributing resources, establishing service priorities, and planning to meet changing needs and demands.

3. Given a descriptive study of the process of providing special education related services, school and classroom level decision makers will have adequate information to more efficiently plan for and deliver related services.

4. Given a causal-comparative study (evaluation) of the product or impact of providing special education related services, school and classroom decision makers will have adequate information to make more effective service delivery decisions.

The pursuit of each objective resulted in the completion of studies producing information specifically addressing the identified needs of decision makers at various levels in the system. A decision-oriented evaluation model--the Context-Input-Process-Product (CIPP) Model--served as the evaluation framework for the project (Stufflebeam et al., 1971). Prior to the inception of the AIRS Project, the Hawaii State Department of Education identified a number of informational needs that provided both a background and an impetus to the Project. The Project was thus a response to informational needs and priorities at the local, state and national levels. Each of the four objectives addressed specific and distinct informational needs.

Firstly, Department of Education and Department of Health administrators had identified the need for information to address problems in personnel recruitment and competition from the private sector. Context evaluation (Objective 1) was envisaged as an identification and description of social, political, and economic forces that have an impact on the related service system as a whole. A high rate of personnel turnovers and vacancies, in particular, was thought to be a crucial local issue. At least one futures-oriented conference was scheduled to enable key state level decision makers to examine information collected through Project activities. Objectives of the conference were to identify and prioritize those factors contributing to personnel turnovers and vacancies and then to identify strategies the State could pursue to overcome problems either resulting from or contributing to the turnovers and vacancies issue.

Also identified was a need for descriptive data representing the present structure and function of the related service system. This need resulted in the formulation of the second objective of the Project (input evaluation). If decision makers do not have a clear picture of the system as it currently functions, they are unable to respond to or promote necessary adjustments to that system. The Project anticipated that data would be collected on each of the four related services in terms of students served by handicapping condition (frequency and percentage), location (Hawaii's seven educational districts), nature of service (direct or indirect), frequency of service (average per month), and cost of service (per unit). Additionally, this information was thought to serve as a data base for evaluation of other aspects of the system (Objectives 3 and 4).

The third objective, process evaluation, was designed to describe the process of providing related services to special education students in Hawaii. Process activities would, for the most part, include the same activities necessary to accomplish product evaluation (Objective 4). Process and product evaluation are considered to be interdependent (i.e., the strength of services should be known where service outcome is to be evaluated), yet some distinctions are evident. These can be gleaned from the two different evaluation questions relevant to each type of evaluation: "How is the related service process carried out?" (Objective 3) versus "Have related services been effective in accomplishing planned educational objectives?" (Objective 4).

Process and product evaluation require the meaningful participation of all parties involved in the delivery of services (Hillard, 1984). School and classroom evaluations, in particular, should embody and employ democratic principles as well as meet the standards of usefulness, feasibility, and accuracy. Project staff consulted with administrators and supervisors and direct service providers throughout the duration of the Project about informational needs and priorities, evaluation questions, and usefulness and accuracy of the results of Project activities. The process of consultation was a factor in insuring cooperation of individuals outside the Project and access to information and records necessary for completion of Project activities.

Educational decision makers need to know if the related services being provided to students are effective in accomplishing individual special education objectives. Originally, product evaluation was designed to focus upon attainment of objectives as listed in the IEP's of students in a voluntary sample of three schools in the state. Each student would have been described in terms of product measures and indicators of objective accomplishment. Subsequent consultation with administrators, supervisors, and therapists, however, resulted in a reformulation of evaluation questions and a reconceptualization of the methodology of product evaluations.

One major by-product of the AIRS Project was an enhanced appreciation for and a general commitment to evaluation of services and programs at the local level. Although this was not a stated objective of the Project, it may be one of its most valuable and enduring products.

Table 1 displays the four objectives of the Project, the identified needs originally associated with each objective, and the anticipated evaluation plan.

Actual Activities Completed

The AIRS Project was originally an 18-month Cooperative Agreement to accomplish the above objectives already outlined. The Project officially started October 1, 1984 and was scheduled to end March 31, 1986. Unfortunately, the Project experienced delays in hiring professional staff. Robert McClelland was hired as a Research/Evaluation Technician on November 16, 1984. Jerry Wang, the second individual hired, assumed the role of Project Director on January 2, 1985 but resigned to take up another position in mid-February, 1986. Because Mr. McClelland assumed Project Director duties subsequent to Mr. Wang's resignation and because of the skills and aptitudes of individuals who responded to a re-advertisement of positions in March, 1986, it was decided to revise personnel needs and establish two Co-Director positions on the Project. A total of approximately 6 months of personnel time was lost to the Project due to delays in hiring Project staff. The Project was extended to July 31, 1986 to accomplish all activities delayed through loss of personnel time.

Table 2 displays the original staffing projection and a revised list of staff hired to accomplish Project activities.

Table 1

Project Objectives, Identified Needs, and Plans to Meet Needs

Objective and Purpose	Need Identification	Plan to Meet Needs/ Answer Questions
Objective (1): Given a general systematic context evaluation of environmental factors that impact on the special education related service system, State and District level decision makers will have adequate information to make effective decisions regarding the improvement of related services. Purpose: To assist decision makers in understanding the context or environment in which the related service system functions and to determine the social, political, and economic forces that have an impact on the system.	The State of Hawaii's inability to fill vacant related service professional positions, to retain personnel, and to compete with the private sector. High personnel turnover results in costly recruitment and training efforts.	Carry out interviews and surveys, and conduct conference(s) to identify those factors that have an impact upon the system as a whole.
Objective (2): Given a general systematic input evaluation (descriptive evaluation of the present structure of services: nature, frequency, cost, etc. of services by student handicapping condition and district), State and District level decision makers will have adequate information for effective decision making: distributing resources, establishing priorities, and planning to meet changing needs and demands. Purpose: Decision makers need to understand how the inputs or resources of the related service system are organized and used.	Local and national expressions of a desire for descriptive evaluations of the provisions of related services (i.e., invitational priorities from the U.S. Department of Education, 1984). Need for descriptive information on: -who is receiving related services (students by handicapping condition, age, school, etc.); -type of related services being provided; and -frequency, nature and cost of service.	Collect and analyze current data recorded in therapist caseload reports. Determine utility of information collected. Develop methods to revise/refine data collection instruments utilized by therapists.

(Table 1 continued)

Project Objectives, Identified Needs, and Plans to Meet Needs

Objective and Purpose	Need Identification	Plan to Meet Needs/ Answer Questions
Objective (3): Given a descriptive study of the process of providing special education related services, school and classroom level decision makers will have adequate information for more efficient service planning and delivery. Purpose: While State and District level decision makers are more likely to be concerned with the context or environment in which a service must function and resources or inputs to accomplish the system's purpose, school and classroom level decision makers on the other hand are usually concerned with the process in which services are provided.	Formal and informal assessments of student services identified the following areas of concern: -discrepancies between classroom observations/evaluations and formal evaluations provided by diagnostic team members -variability of the role of therapists in team planning and questions regarding appropriateness of direct involvement in that process -effectiveness/usefulness/validity of consultation services provided by related service professionals	Conduct evaluation studies on a selective basis using a "democratic evaluation" method to determine involvement of decision makers (Hillard, 1984). Involve decision makers in the evaluation process with an exercise of some control over evaluation activities. Evaluation activities to include, but not be limited to, review of school and student records, and interviews with those involved in student identification, evaluation, planning, and service delivery. Limited project resources necessitates primarily qualitative methods focusing upon communications between decision makers, reviews of interdisciplinary relationships and agreements, and surveys measuring satisfaction with adequacy, availability, and utility of system processes.
Objective (4): Given a causal-comparative study (evaluation) of the product or impact of providing special education related services, school and classroom level decision makers will have adequate information for more effective service delivery. Purpose: To obtain information on the effectiveness of special education related services in assisting handicapped students to benefit from special education.	A review of due process hearings indicated that the effectiveness of related service is often an issue in special education. Related service providers have expressed a strong desire for product evaluation. Generally the evaluation question is: "How effectively are related services being accomplished?" More specifically, there is a need for answers to questions such as: -How is effectiveness measured? -Should evaluation be based on objectives as presented in IEPs, developmental stages, norms, or other criteria? -What elements of the process lead to more effective products? -With which students is therapy most effective? -Can consultation be an effective service delivery method?	Product evaluation need not be conducted independently of process evaluation. Activities anticipated include historical and time-trend studies of individual students and quasi-experimental studies utilizing non-equivalent control groups.

Table 2

Staff for AIRS Project

Original Staff Projections	Final Staff Hired
Project Director (1.0 FTE)	Co-Director, Program/Evaluation Nov. 16/84 - Jul. 31/86
Research/Evaluation Specialist, LD (0.2 FTE)	Co-Director, Research/Evaluation Apr. 1/85 - Jul. 31/86
Research/Evaluation Specialist, Related Services (0.2 FTE)	Research Evaluation Specialist May 85 - Aug. 85
Research Evaluation Technician (1.0 FTE)	Research Assistants (3) May 85 - Jul. 31/86

Without the active assistance and cooperation of personnel in the State Departments of Education and Health, anticipated activities could not have been accomplished. These individuals provided invaluable advice to Project staff. In particular, the assistance of professionals in (a) the Department of Education, Office of Instructional Services, Special Education Section, and (b) the Department of Health, Family Health Services Division is deeply appreciated. Their personnel time comprised a large "chunk" of State contributions to the Project budget.

All four objectives of the Project were accomplished. Some of the anticipated activities were either revised, discontinued, or replaced in consultation with the Project Advisory Board (see Appendix A) and/or educational and health service decision makers. Ten technical reports and a summary of the Futures-Oriented Planning Conference were prepared and disseminated by the AIRS Project. A list of those reports is contained in Appendix B.

Table 3 displays a comparison between anticipated and actual activities completed under each objective, and summarizes additional information about the activities.

Succeeding chapters in this report provide information gleaned from the activities and studies undertaken by the Project. The chapters are arranged in the order of objectives pursued by the Project. Chapters II to V provide information gleaned from a context evaluation of related services. Chapters VI to VIII are the results of studies appropriate to a general systematic input evaluation. Process evaluation studies are summarized in Chapters IX to XI. Chapter XII provides the results of a product evaluation study in one of the educational districts in Hawaii.

Although professionals providing speech/language therapy in Hawaii are commonly known as "speech pathologists" or as "speech and hearing specialists", qualifications and job descriptions are identical. In this report, however, the term "speech therapists" will be used for the sake of brevity and consistency. In addition, "speech therapy" will refer to therapy to remediate both speech and language disorders.

Table 3

Activities Anticipated and Accomplished

Objective #1

Given a general systematic context evaluation of environmental factors that impact on the special education related service system, State and District level decision makers will have adequate information to make objective decisions regarding the improvement of related services

Major Anticipated Activities	Major Activities Accomplished	Explanations
1. Reformulate evaluation questions through consultation with Advisory Group and educational and therapeutic specialists.	1. Consultation with the Advisory Group on a regular basis and ongoing consultation and communication with educational and therapeutic specialists resulted in significant reformulations of evaluation questions.	1. Those involved in providing services need to be actively involved in the evaluation process. A "democratic" involvement resulted in formulation of evaluation questions and goals not significantly addressed in the original proposal but found to be particularly relevant to improve current needs to related services. Reformulation of evaluation questions was a major activity for each objective.
2. Complete review of related service in Hawaii.	2. Historical review partially completed through personal interviews and access to annual reports.	2. Due to the partial completion of the historical review of related services, information gathered will not be included in the final report.
3. Review agency records on therapist turnovers and vacancies to obtain data on current vacancies and annual turnover rates to service a basis for future in-depth studies.	3. Completed review of agency records (Department of Education and Department of Health).	3. Project staff completed Technical Report Number 85-07-101 based upon results of reviews of agency records. A draft of the report was disseminated and used at the Futures Conference.

(Table 3 continued)

Activities Anticipated and Accomplished

(Objective #1 continued)		
4. Determine local and national factors affecting personnel turnovers and vacancies.	4. Developed two surveys and disseminated to the following audiences: (a) Personnel who have left the system within last 3 years. (b) Midile and upper level administrators currently employed and involved in providing service.	4. Technical Reports 86-101-102 and 86-101-103 provided two perspectives on factors affecting personnel turnovers and vacancies in Hawaii. Drafts of both reports were disseminated within the system and contributed to the database of the Futures Conference.
5. Conduct a futures-oriented planning conference to examine contextual factors having an impact upon the related service system.	5. Conducted futures-oriented planning conference in February, 1986.	5. The conference brought together 33 representatives from a diversity of state agencies who were able to consult upon strategies to collectively pursue to remediate problems associated with high personnel vacancy and turnover rates. The conference facilitated collaboration between agencies sharing common concerns regarding provision of related services.

(Table 3 continued)

Activities Anticipated and Accomplished

Objective #2

Given a general systematic input evaluation (descriptive evaluation of the present structure of services: nature, frequency, cost, etc., of services by student handicapping condition and district), State and District level decision makers will have adequate information for decision making, distributing resources, establishing priorities, and planning to meet changing needs and demands.

Major Anticipated Activities	Major Activities Accomplished	Explanations
1. Collect, compile, and analyze data on number of students receiving speech/language service, average frequency and duration of service per student, and relative cost of service.	1. Completed analysis of data from speech therapists' monthly statistical reports.	1. Data represents a "snapshot" of speech/language services. Statistical reports from April or May, 1985 were reviewed and analyzed. Technical Report 85-07-201 was completed and disseminated. Statistical reports were structured in such a way that average frequency and duration could not be computed. Computation of "costs" of service were too cumbersome to attempt. Project staff were involved in revision and pilot-test of modified monthly statistical logs.
2. Collect, compile, and analyze data on extent of occupational therapy service in Hawaii public school system.	2. Completed analysis of data of occupational therapy services.	2. Developed a "snapshot" of occupational therapy services through analysis of data from April or May, 1986 therapist logs. Technical Report 86-07-202 completed and disseminated.
3. Collect, compile, and analyze data on extent of physical therapy services in Hawaii public school system.	3. Completed analysis of data on physical therapy services.	3. Completed a "snapshot" of physical therapy services through analysis of data from May 1986 therapist logs. Technical Report 86-07-203 completed and disseminated.
4. Collect, compile, and analyze data on the extent of mental health services in Hawaii public school system.	4. Consulted with decision makers in the Department of Health about method of collecting data on services provided. Reviewed data collection forms.	4. Due to problems regarding accuracy and completeness of data obtained on mental health services, and insufficient time to devote to improving accuracy and completeness, no review and analysis of data was attempted.

(Table 3 continued)

Activities Anticipated and Accomplished

Objective #3

Given a descriptive study of the process of providing special education services, school and classroom level decision makers will have adequate information for more efficient service planning and delivery

Major Activities Anticipated	Major Activities Accomplished	Explanations
1. Collect and analyze data on impact of student absenteeism on occupational therapy services.	1. Consulted with decision makers in the Department of Health on the extent to which student absenteeism was recorded.	1. Pursuit of other activities precluded completion of activity.
2. Conduct Level of Use Interviews with speech pathologists and communication aides on implementation of Distar Language Program.	2. Level of Use Interviews conducted between February and May, 1985.	2. Conducted internal report on Level of Use Interviews. Information gathered from interviews is also contained in Technical Report 86-06-401. (Evaluation of the Distar Language Program.)
3. Interview related service professionals to obtain information on evaluations to determine student eligibility for service and professional recommendations regarding related service delivery (nature, frequency, and duration).	3. Interviews with related service professionals completed, data reviewed and analyzed.	3. Produced and disseminated Technical Report 85-11-301 based upon results of the interviews.
4. Examine perceptions of factors affecting consultation services provided by related service professionals to special education teachers.	4. Developed and disseminated separate surveys to special education teachers and related service professionals regarding perceptions of consultation services.	4. Developed and disseminated two Technical Reports based upon information gathered and analyzed in the surveys. (Report Numbers 86-02-302 and 86-02-303.)

(Table 3 continued)

Activities Anticipated and Accomplished

Objective #4

Given causal comparative study (evaluation) of the product or impact of providing special education related services, school and classroom decision makers will have adequate information to make more effective delivery decisions.

Major Anticipated Activities	Major Activities Accomplished	Explanations
1. Evaluate effectiveness of a Distar Language Program used by speech therapists to improve oral language skills of students receiving speech/language therapy.	1. Developed and completed evaluation study of the Distar Language Program.	1. Technical Report 86-06-401 details the results of the study.
2. Conduct study on the impact of service intermission on range of motion of students receiving physical therapy.	2. Conducted consultation with decision makers on feasibility and value of study.	2. Consultation resulted in decision not to pursue the study due to concerns about: relative value of study results and problems with sampling and research design.
3. Conduct study on the relative effects of direct and consultation services on perceptual motor performance of students receiving occupational therapy.	3. Conducted consultation with decision makers on feasibility and value of study.	3. Consultation resulted in decision not to pursue study due to concerns with: limited value of study and appropriateness of measurement.

II. STATISTICS ON PERSONNEL VACANCIES AND TURNOVERS

INTRODUCTION

The State of Hawaii has recognized a need to fill vacant related service professional positions, to retain qualified personnel, and to compete with the private sector in attracting related service professionals to the educational and health service system. Although such a need has been recognized and concerns regarding this condition have been generated, little quantitative information has been gathered to assist State agencies to resolve problems associated with a high rate of turnovers and vacancies. An evaluation of the current condition of personnel vacancies and an historical review of turnovers were required.

A review of agency personnel records will (a) establish a preliminary database on related service professional vacancies and turnovers, and (b) serve as a basis for a thorough examination of related service employment characteristics and the impact (intensity and scope) of those characteristics upon the provision of related services. There seems to be a realization that the context (i.e., environment), including employment of related service professionals, has a direct and significant influence on the quality of related services.

METHOD

Population Studied

Vacancy and turnover data on the following types of personnel in the public sector were retrieved: occupational therapists, occupational therapy assistants, physical therapists, speech therapists and mental health professionals (clinical psychologists and psychiatric social workers). Personnel in each of these types of positions provide related services to special education students in the public school system in Hawaii. Speech therapist personnel are Department of Education employees. All other personnel positions are located in the Department of Health.

Procedure

The data collection effort consisted of researching personnel files within the Department of Education and the Department of Health. Personnel clerks in the Department of Education and in the Department of Health (rather than the AIRS staff) gathered relevant information from personnel records because of concerns for the privacy of those individuals no longer employed by State agencies. Although AIRS Project staff were unable to independently verify the accuracy of the data collection procedure or of the tabulated results, personnel within both State agencies who have reviewed the results concur with the accuracy of those results. Exactly how many records were reviewed also is not known to Project staff. Information obtained through the Department of Health was further distinguished by source: (a) School Health Services Branch and Developmental Disabilities Branch under the auspice of the Family Health Services Division, and (b) Mental Health Division. Records were reviewed to obtain data from January 1979 to December 1984, a 6 year span. Information required for the analyses included (a) number of currently allotted positions, (b) number of current position vacancies, and (c) the total number of turnovers observed for the 6 year span. Further calculations based on the preceding information provided data on (a) current percent vacancies, (b) a 6 year turnover rate, and (c) an average annual turnover rate.

RESULTS

Summary statistics on personnel vacancies and turnovers in the four areas of related services are contained in Tables 4 through 7. Each table includes information on the number of allotted positions in July 1985, number of vacancies at that time, percent of position vacancies, number of turnovers, and 6 year and average annual turnover rates (percentages).

Table 4 contains data on position vacancies and turnovers for clinical psychologists and psychiatric social workers. The information is reflective of personnel positions located in the Department of Health's Mental Health Division and the Developmental Disabilities (DD) Branch of the Family Health Services Division. The total number of allotted positions for clinical psychologists was 17. Approximately 30% of the clinical psychologist positions were unfilled as of July 1985. Neither of the two Developmental Disabilities Branch positions were filled (100% vacancy). The average annual turnover rate for clinical psychologists overall was 20%. The average annual turnover rate for the Developmental Disabilities Branch, however, was over twice that figure (42%), which translates into a 100% change in clinical psychologists within the Developmental Disabilities Branch every 2 to 2.5 years. Of the 20 allotted positions for psychiatric social workers, 10% were unfilled, and the average annual turnover rate was approximately 20%.

Summary statistics for occupational therapy positions are contained in Table 5. There were a total of 33 allotted positions for registered occupational therapists. As of July 1985, a 12% vacancy existed. The average annual turnover rate for occupational therapists overall was 32%. The highest annual turnover rate identified was 45% (School Health Services Branch). With regards to occupational therapy assistant positions, 18% of the 11 allotted positions were vacant. The average annual turnover rate for occupational therapy assistants was slightly less than the rate for occupational therapists (41%). Overall, there were 44 occupational therapist positions of which over 13% remained vacant; change among occupational therapists and their assistants was characterized by a 35% annual turnover rate.

Data on physical therapist positions are listed in Table 6. Of the 20 positions available, 35% were vacant. Two of three positions allotted for the Developmental Disabilities Branch were unfilled (67%). The average annual turnover rates for both the School Health Services and Developmental Disabilities Branches were similar, hovering at about 30%. Overall, the average annual turnover rate for physical therapists was 32%.

Table 7 provides a breakdown by educational district on position vacancies and turnovers for speech therapists. The total number of allotted positions was 120. The average level of position vacancies per

Table 4

Personnel Vacancies and Turnovers of Clinical Psycholgist and Psychiatric Social Worker Positions, 1979 - 1984

	No. of Allotted Positions	No. of Current Vacancies (7/85)	Percent Vacancies	No. of Turnovers (1979-84)	6-year Turnover % Rate	Average Annual Turnover % Rate
			Clinical Psychologists			
Mental Health Division	15	3	20	15	100	17
Developmental Disabilities Branch	2	2	100	5	250	42
Total	17	5	29	20	118	20
			Psychiatric Social Workers			
Mental Health Division	20	2	10	23	115	19

Table 5

Personnel Vacancies and Turnovers of Occupational Therapist and Certified Occupational Therapist Assistant Positions, 1979 - 1984

	No. of Allotted Positions	No. of Current Vacancies (7/85)	Percent Vacancies	No. of Turnovers (1979-84)	Six Year Turnover % Rate	Average Annual Turnover % Rate
			Occupational Therapists			
School Health Services Branch	20	3	15	54	270	45
Mental Health Division	2	0	0	3	150	25
Developmental Disabilities Branch	11	1	9	7	64	11
Total	33	4	12	64	194	32
			Certified Occupational Therapist Assistants			
School Health Services Branch	11	2	18	27	245	41
Grand Total, Occupational Therapy	44	6	14	91	207	35

Table 6

Personnel Vacancies and Turnovers of Physical Therapist Positions, 1979 - 1984

	No. of Allotted Positions	No. of Current Vacancies (7/85)	Percent Vacancies	No. of Turnovers (1979-84)	Six Year Turnover % Rate	Average Annual Turnover % Rate
School Health Services Branch	17	5	29	33	194	32
Developmental Disabilities Branch	3	2	67	5	167	28
Total	20	7	35	38	190	32

Table 7

Personnel Vacancies and Turnovers of Speech Therapist Positions, 1979 – 1984

District	No. of Allotted Positions	No. of Current Vacancies (7/85)	Percent Vacancies	No. of Turnovers (1979-84)	Six Year Turnover % Rate	Average Annual Turnover % Rate
Honolulu	21	4	19	13	62	10
Central	23	3	13	35	152	25
Leeward	24	7	29	37	154	26
Windward	19	4	21	21	111	18
Hawaii	14	5	36	20	143	24
Maui	11	1	9	9	14	14
Kauai	8	1	13	6	75	13
Total	120	1	21	141	118	24

Note. Three 50% positions exist in Windward District. Total FTE positions = 118.5.

district was 21% with a range per district from 9% (Maui) to 36% (Hawaii). With regards to change in personnel, the average annual speech therapist turnover rate per district (overall) was 24%, with a range from 10% (Honolulu) to 26% (Leeward).

The results obtained on personnel vacancies are summarized graphically in Figure 1. Similar information compiled on average annual turnovers is shown in Figure 2.

DISCUSSION

Results from a selected review of State agency personnel records point to a sizable degree of employment instability among professionals providing related services to special education students in Hawaii. The effect of professional employment instability on related services to special education children has not been directly or empirically investigated. For each therapist who terminates his or her position, as many as 30-60 students may be affected by the turnover. New therapists must conscientiously establish a rapport with each of their students, become acquainted with the history and specific disorders or disabilities of students on his/her caseload, and begin to communicate effectively with teacher and parents. Such periods of personal orientation, in addition to training and recruitment efforts which are implemented by the State, result in burdensome financial costs and reductions in the efficiency and effectiveness of services to handicapped students.

Although there are warranted suppositions that a relatively high percentage of turnovers and vacancies has a negative effect on service delivery, efforts to document or support such hypothesized relationships are rare. There is a need to determine the extent to which services are undermined due to a constant change in personnel. It would also be noteworthy to compare the results of this study with statistics on personnel change among similar professions in the private sector, and with nation-wide figures, if such information is readily available. At present, there exists a nation-wide shortage of occupational therapists and physical therapists and the demand for occupational therapists, certified occupational therapy assistants and physical therapists is expected to grow steadily in the coming decades (AOTA, 1984; APTA, 1985). Similar shortages are anticipated for other related service professionals. The legislative mandate of PL 94-142 enacted in 1975 required a "free and appropriate education" for all students including the handicapped and created a demand for related services with a concomitant need to employ additional related sevice professionals.

Turnover rates appear to be most acute in the public sector among occupational therapists. However, none of the related service areas is immune to relatively high rates of personnel change. The data on position vacancies, as of 1985, indicate that the highest level of position vacancies at the time was within the physical therapy profession (35%). On the other hand, occupational therapy positions, (both occupational therapist and occupational therapy assistant), had relatively low rates of position vacancies (12% and 13% respectively).

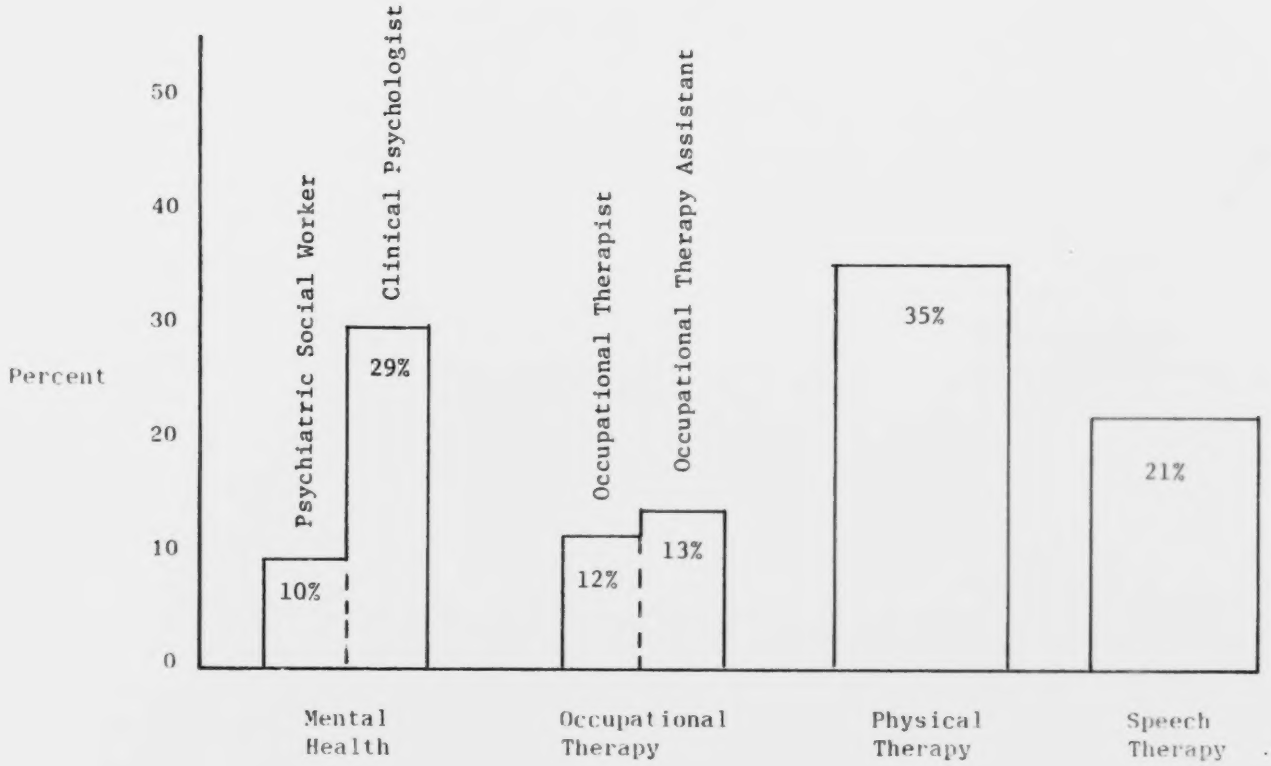

Figure 1 Percent position vacancies for four special education related services.

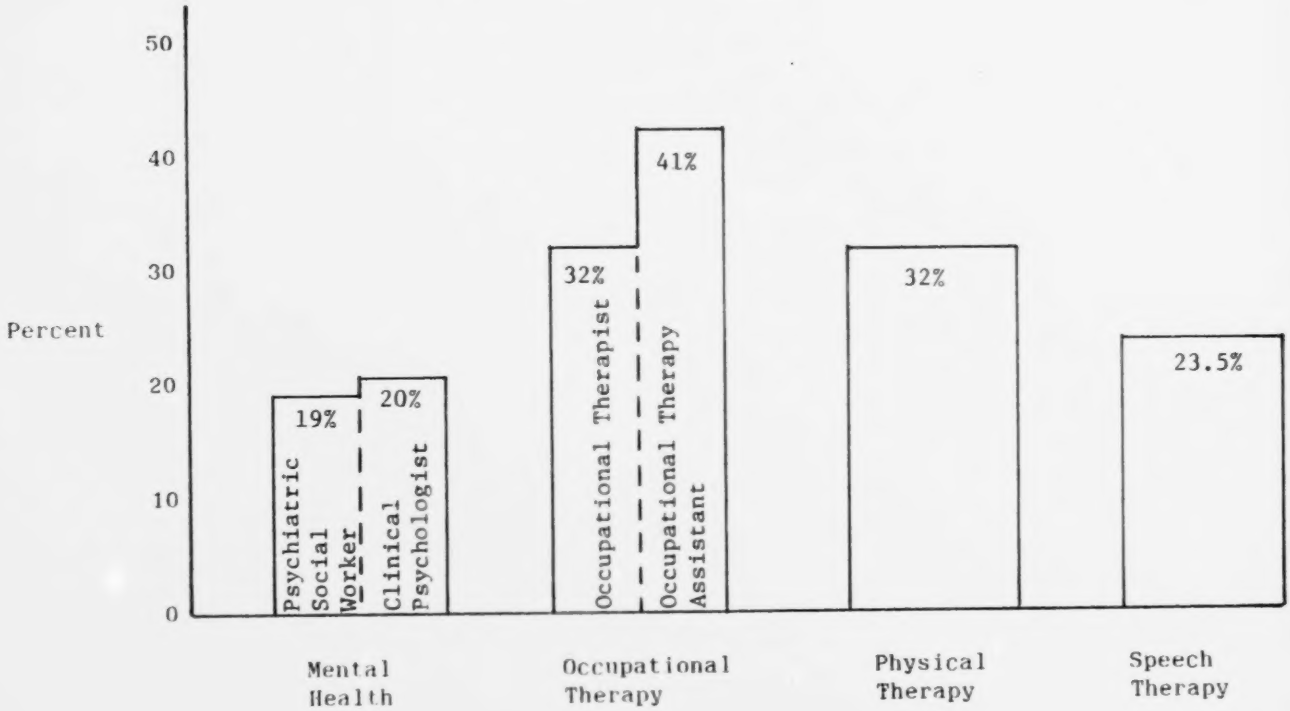

Figure 2. Average (mean) annual personnel turnover rates for four special education related services, 1979 - 1984.

A follow-up study to identify the underlying reasons for difficulties in filling vacant positions is presented in a following section of the final report. Additional studies in Hawaii which build upon the present study or more completely investigate aspects of employment characteristics need to be undertaken.

A technical caveat is in order here. The percentages on position vacancies for occupational therapists and physical therapists may reflect slightly elevated levels than usual, due to the recent increase in allotted positions by the 1985 State Legislature (2 additional occupational therapist and 1 additional physical therapist positions). By the same token, the annual turnover rate is somewhat conservative for occupational therapist and physical therapist positions, because the current number of allotted positions is used in calculating the annual turnover rate

To reiterate, several recommendations can be made based upon results of the current study.

1. Initiate experimental studies to investigate the impact of employment instability upon the effective delivery of related services to handicapped children.

2. Initiate statewide collaborative efforts among appropriate State agencies to reduce the turnover rate and to attract qualified related service professionals to the public sector.

3. Continue investigative efforts to more fully document factors contributing to relatively high rates of employee turnover and relatively high vacancy ratios in the related service fields.

III. THE ADMINISTRATOR'S PERSPECTIVE OF RELATED SERVICES IN SPECIAL EDUCATION

INTRODUCTION

In one of the first attempts to examine the underlying problems associated with job turnovers in the health care field, Harkson, Unterreiner and Shepard (1982) studied the relationship between personal or work related factors and job turnovers in the physical therapy profession. Using a nationwide sample, Harkson et al. found physical therapists were most concerned with "insufficient salary" and a "desire to pursue a different area of physical therapy." These results are supportive of earlier findings by Broski and Cook (1978) who found that physical therapists were least satisfied with salaries and opportunities for promotion. High turnover rates were noted within the physical therapy profession, and Harkson et al. also found that physical therapists, especially recent graduates, had a desire or need for continuation of structured educational experiences. Both the Harkson et al. and Broski and Cook studies involved therapists who were employed primarily in a clinical setting.

The purpose of the present study was to analyze and describe from an administrator's perspective (a) the delivery of special education related services, and (b) factors that influence position vacancies and turnovers in occupational therapy, physical therapy, speech/language therapy, and mental health services.

METHOD

Participants

Participants included administrators from two State of Hawaii agencies (the Department of Education and the Department of Health), and various community agencies, projects, and the University of Hawaii. Forty-five participants were selected on the basis of administrative or supervisory role in special education related services.

Procedure

A 13-item survey questionnaire was mailed in November 1985 to 55 administrators/supervisors throughout the State of Hawaii. The survey instrument included items pertaining to related services employment and services provided in mental health counseling, occupational therapy, physical therapy and speech therapy. Sample items include perceptions by administrators of related services effectiveness, caseload, quality of training provided to related service professionals, factors influencing therapist position vacancies and turnovers, and areas in need of study and/or improvement. A copy of the instrument is attached (Appendix C).

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RESULTS

A total of 45 survey questionnaires were completed and returned (82% return rate). Respondents from the Department of Education represented 51% (n=23) of the sample. Department of Health administrators represented 31% (n=14), while the remaining 18% (n=8) was comprised of other interested parties, including administrators from various community agencies.

Demographics

The largest contingent of the sample consisted of educational specialists (36%, n=16) from both the district and state levels. Current positions of other respondents ranged from therapist supervisor to social work administrator. Within the sample, 45% (n=18) of the administrators held State level positions. Another 50% (n=20) held district or catchment-level positions, while 5% (n=2) were classified as "other." Five respondents did not provide information on their position level.

Information on "position status" was provided by 41 respondents. Of the 41 individuals who did respond, 30 were employed in permanent positions; the remaining 27% (n=11) were employed in temporary positions. Sixty percent of the respondents (25 of 42) had been employed in their present positions for more than 5 years.

Rating Scales

The perceived overall effectiveness of four related services was measured on a 7-point scale (1 = very ineffective, 7 = very effective). A score of 4 was the midpoint of the rating scale. The mean (average) effectiveness rating (based on an n of 39) for occupational therapy was 4.5, with a standard deviation (S.D.) of 1.1. Ratings of average effectiveness or better (score of 4 or higher) for occupational therapy were given by 87% of those responding. Ratings of average effectiveness or better for physical therapy were given by 87% of those responding. Ratings of average effectiveness or better (score of 4 or higher) for speech therapy were given by 95% of those responding. Administrators gave mental health direct services a mean effectiveness rating of 3.2. Ratings of average effectiveness or better for mental health services were given by 40% of those responding. See Figure 3 for a breakdown of perceived effectiveness of each of the four related service areas by individuals affiliated with the Department of Health (DOH), Department of Education (DOE) and "other agencies."

Respondents were also asked to rate the quality of training and preparation received by Hawaii's related service providers. A 7-point scale was again used, with a score of 1 representing very low quality and a score of 7 representing very high quality. The mean rating for training in occupational therapy based on the perceptions of 36 administrators was 4.8. Ratings of average quality or better for occupational therapy training were given by 97% of those responding. Ratings of average quality or better for both physical therapy and speech therapy training were given by 100% of those responding. The training of mental health service providers was given a mean rating of 3.9. Ratings of average quality or better for mental health training were given by 63% of those responding. Figure 4

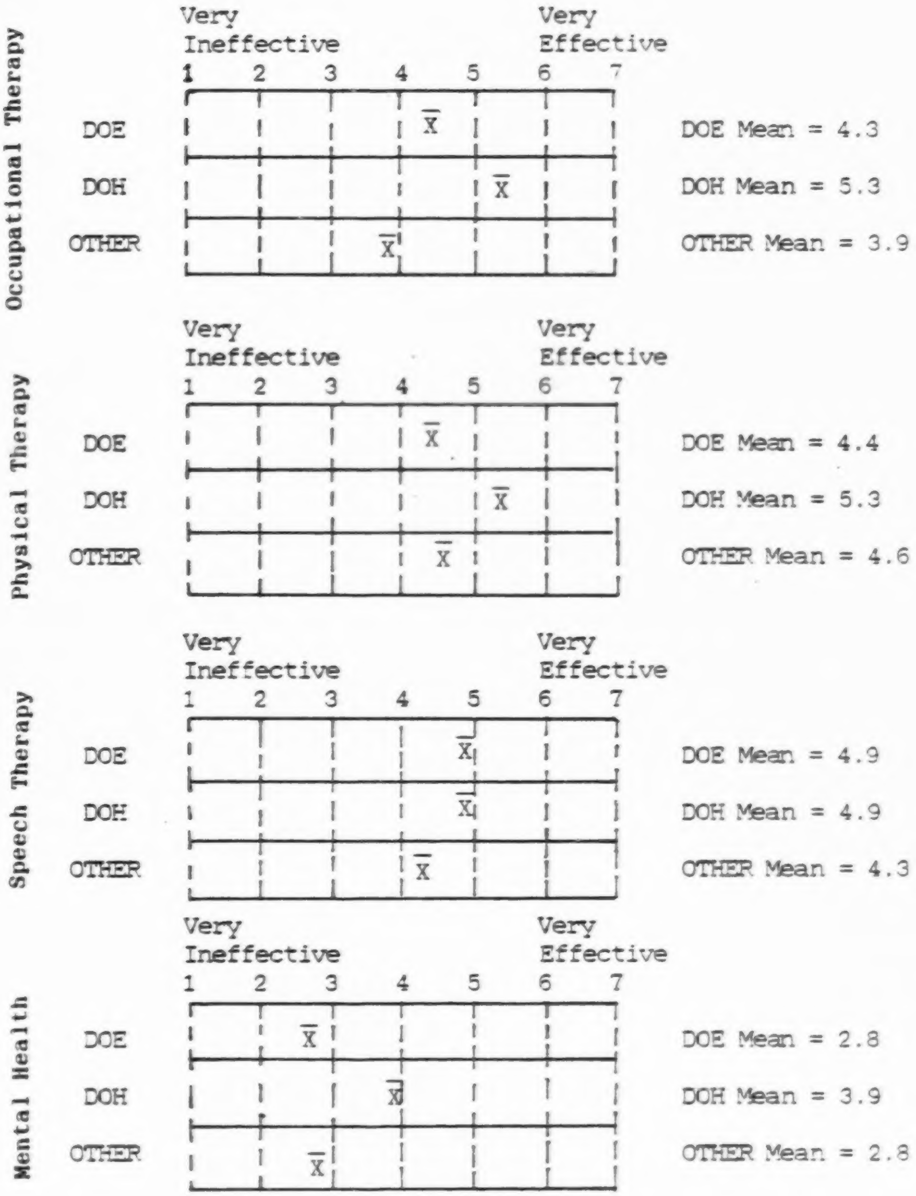

Figure 3. Mean ratings by administrators of effectiveness of direct service providers in four related services.

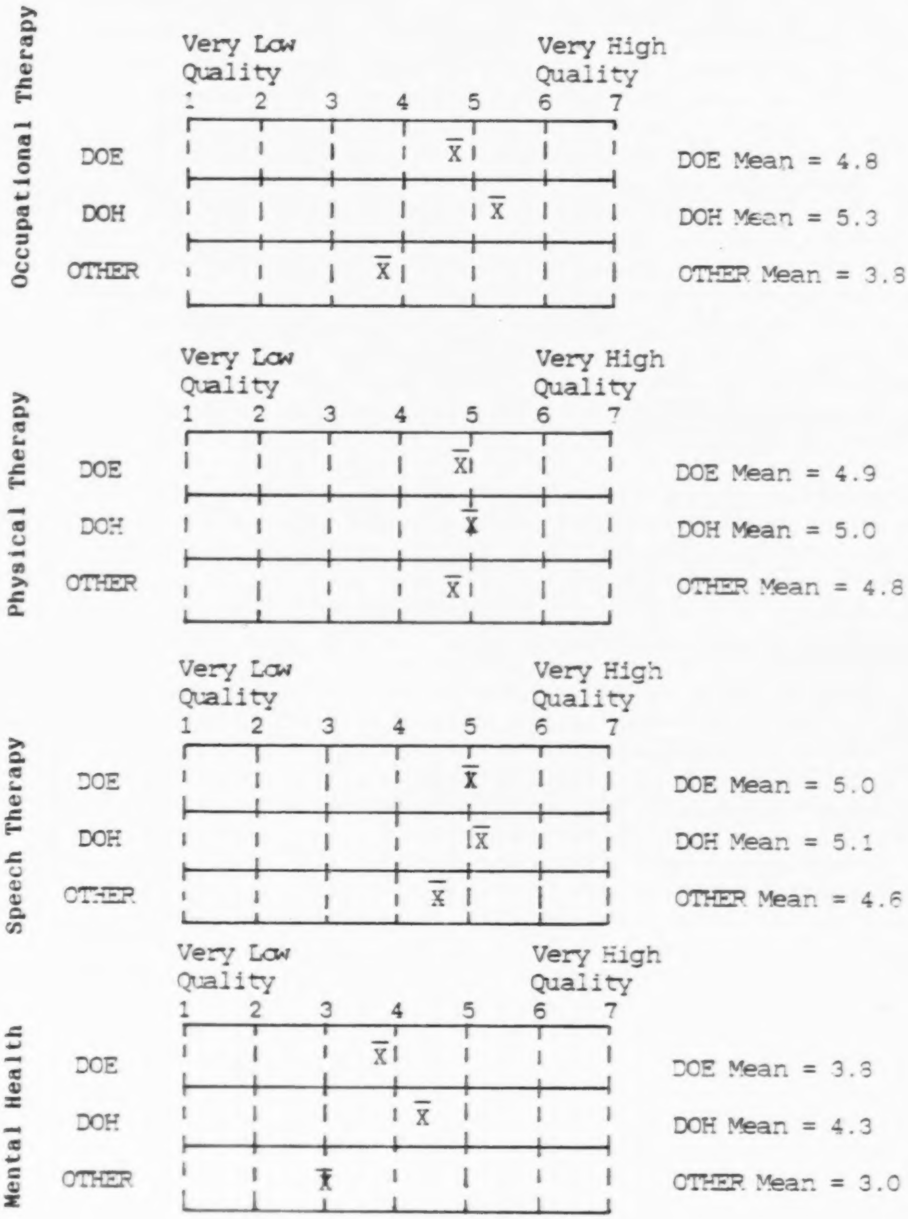

Figure 4. Mean ratings by administrators of the quality of training and preparation received by direct service providers in four related service areas.

provides a graphic comparison of the perceived quality of training among the four related service areas across agency affiliation.

Respondents provided their perceptions of changes in the quality of related services in Hawaii, using the last 5 years as a time frame. According to 43.6% (n=17) of the respondents, occupational therapy has improved; 10.3% (n=4) felt that occupational therapy has worsened, while 46.2% (n = 18) indicated that the quality of occupational therapy had not changed over the past 5 years. Six respondents did not give any indication of their perceptions; a total of 39 administrators provided a response.

Forty administrators shared their views on the direction of change in the quality of physical therapy services. Of these 40, 45% (n=18), felt that the quality of physical therapy has improved. In the view of 15% of the administrators (n=6), the quality of physical therapy services has declined; 40% (n=16) saw no change in the quality of physical therapy services.

Over 43% (n=17) saw improvement in the quality of speech therapy services over the last 5 years. According to the perceptions of one respondent (2.6%), the quality of speech therapy has worsened; 53.8% (n=21) saw no change in the quality of speech therapy. Six administrators did not rate speech therapy services.

Forty respondents rated their perceptions of change in the quality of mental health services. Thirty percent (n=12) felt that the quality of mental health services has improved. The perception that the quality of services has declined was shared by 25% (n=10). The final 45% (n=18) indicated that the quality of mental health services has remained unchanged over the past 5 years.

The respondents shared their perceptions of the availability of related service providers. That is, to what extent are service providers available to work with students? Respondents were asked to use a 7-point scale, with "1" being "always unavailable" and "7" being "always available". Occupational therapy received a mean rating of 3.8 based on the perceptions of 37 respondents. Ratings of average availability levels or better for occupational therapy were given by 57% of those responding. Ratings of average availability levels or better for physical therapy were given by 47% of those responding. Ratings of average or better availability levels for speech therapy were given by 73% of those responding. Ratings of average or better availability levels for mental health services were given by 40% of those responding. Figure 5 contains a summary of the mean ratings attributed to four related service areas by administrators within the Department of Health, Department of Education, and other agencies.

Caseloads

Figure 6 provides a frequency distribution of responses obtained when administrators were asked to rate the typical caseload levels of related service providers. The caseloads in occupational therapy (including occupational therapists and occupational therapy aides), were rated by 37 administrators, of which 73% indicated typical caseloads were high or

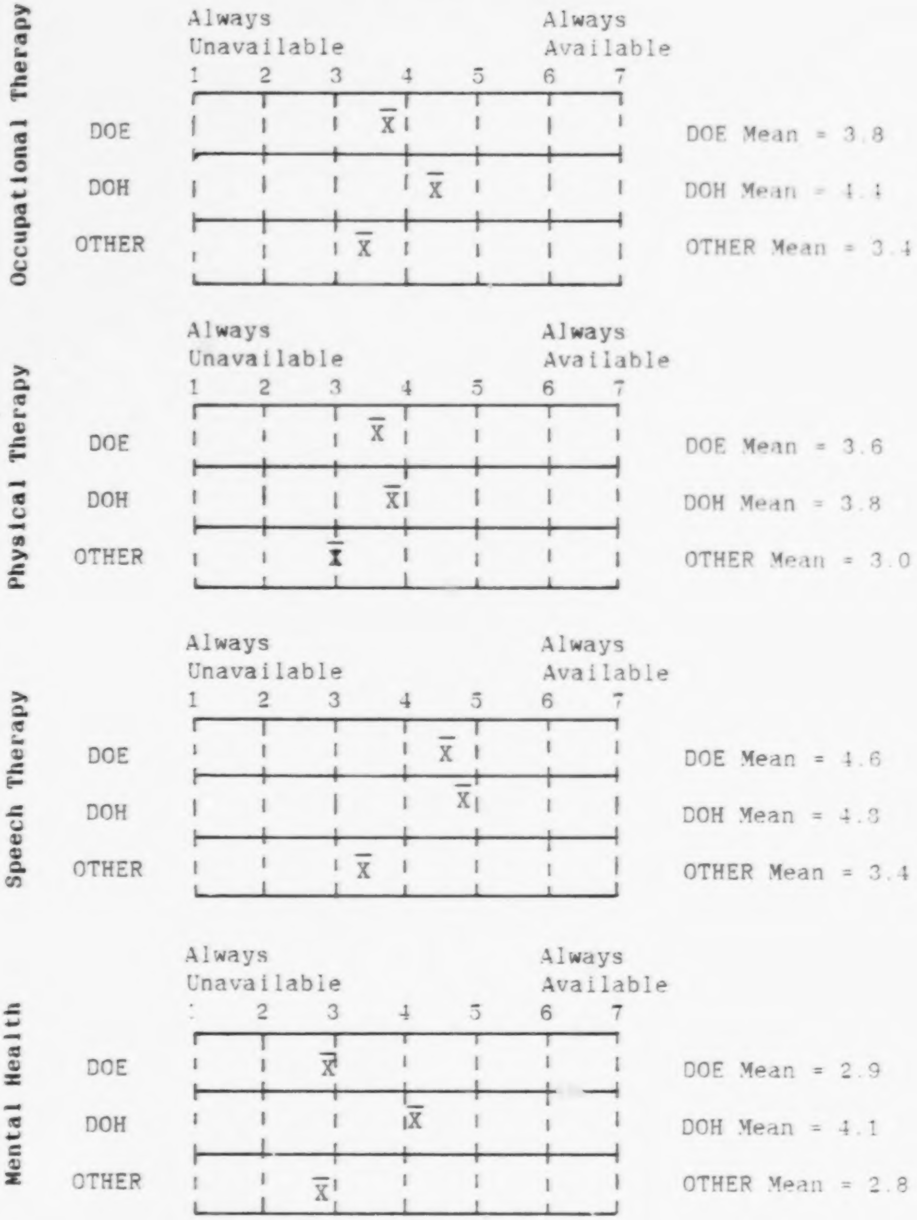

Figure 5. Mean ratings by administrators of availablity of direct service providers in four related service areas.

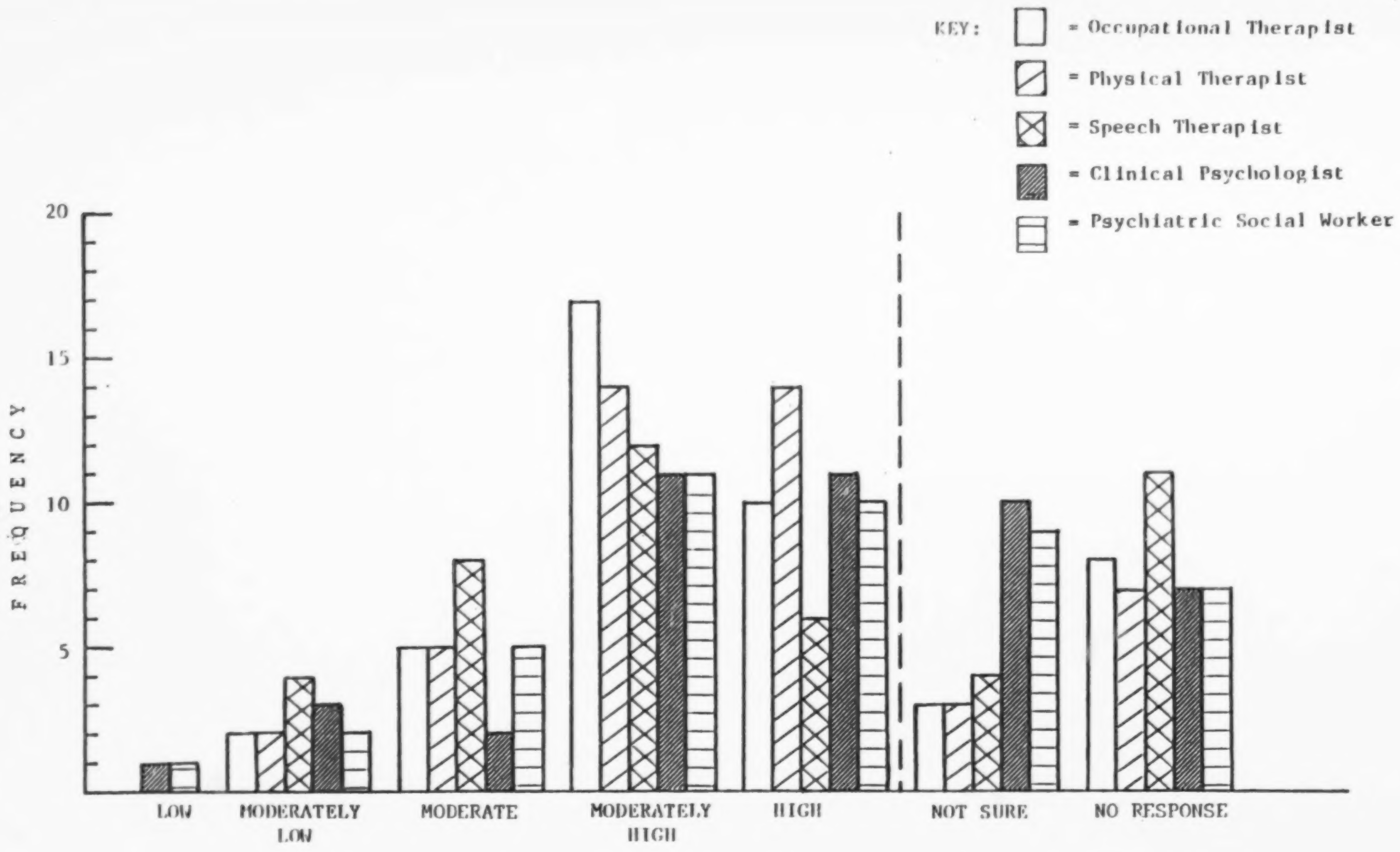

Figure 6. Administrator's perceptions on levels of typical caseloads of related service providers.

moderately high. The typical caseload of a physical therapist was judged by 38 respondents; 74% considered typical physical therapy caseloads to be high or moderately high. Thirty-four administrators rated speech therapy caseloads; 53% indicated high or moderately high caseloads for speech therapy providers. Thirty-eight respondents gave their perceptions of clinical psychologist caseloads; 58% indicated that typical caseloads were high or moderately high. Views regarding typical caseloads of psychiatric social workers were gathered from 38 respondents; 55% indicated that typical caseloads were high or moderately high.

Needed Research

Survey respondents indicated which areas of related services deserved further research; this question drew 43 responses, which are summarized in Table 8.

Open Ended Items

Participants were asked to respond to four items that included possible open-ended answers. The first two items addressed the issues of position vacancies and turnovers of direct service providers in occupational therapy and physical therapy. Tables 9 and 10 list those factors administrators identified as major contributors to the difficulties in filling position vacancies and in reducing personnel turnovers, respectively. Table 11 shows major categories of changes identified by agency administrators that would be needed to improve related services provided to Hawaii's special education population.

DISCUSSION

Items in the survey instrument were designed to measure the perceptions of administrative decision-makers. The major research questions asked in the present study involved administrators' perceptions of:

1. Quality of training and preparation received by related service providers.

2. Availability of related services for Hawaii's handicapped students.

3. Effectiveness of related services.

4. Changes in the quality of related services over the last 5 years.

5. Caseload level of related service providers.

6. Factors influencing position vacancies and turnovers.

7. Changes needed to improve related services.

8. Areas in need of study or improvement.

Administrators perceive the quality of training and preparation received by related service providers to be adequate level. However,

Table 8

Administrators' Perceptions of Areas in Need of Study and/or Improvement in Special Education Related Services

Area in need of research	f	% of sample (43 administrators)
Measures of Effectiveness	34	79.1
Related Service Delivery Systems	30	69.8
Salary Levels	26	60.5
Retainment	25	58.1
Recruitment	23	53.5
Budget Allocations	21	48.8
Service Equity	17	39.5
Promotion Practices	12	27.9
Total	188	100.0

Note. Administrators provided multiple responses

Table 9

Administrators' Perceptions of Major Contributors to Difficulty in Filling Position Vacancies in Occupational and Physical Therapy

	Agency of Respondent			
Administrator Response	DOE	DOH	OTHER	TOTAL
Salary scale	15	7	5	27
Insufficient number of personnel	10	6	1	17
Working conditions	6	3	4	13
Recruitment/hiring process	4	5	0	9
Inadequate or lack of preservice training	6	2	1	9
Competitive market	3	0	1	4
Inadequate inservice training	0	1	3	4
Relationship with administration/ bureaucracy	2	0	1	3
Dissatisfactions with service delivery model	0	2	0	2
Relationships with non-supervisors	0	2	0	2
Other insufficient incentives	1	0	1	2
Professional dissatisfactions (unspecified)	0	1	0	1
Other factors	0	2	0	2
Total	47	31	17	95

Note. DOE = Department of Education
DOH = Department of Health

Table 10

Administrators' Perceptions of Major Contributors to High Levels of Turnovers in Occupational and Physical Therapy

	Agency of Respondent			
Administrator Response	DOE	DOH	OTHER	TOTAL
Salary scale	13	6	1	20
Working conditions	10	4	1	15
Competitive market	7	2	1	10
Relationship with non-supervisors	1	4	0	5
Dissatisfactions with service delivery model	0	3	2	5
Other insufficient incentives	2	2	1	5
Relationship with administration/ bureaucracy	1	2	0	3
Professional dissatisfactions (unspecified)	1	1	1	3
Inadequate inservice training	0	2	0	2
Insufficient number of personnel	2	0	0	2
Recruitment/hiring process	1	0	0	1
Inadequate or lack of preservice training	0	0	0	0
Other factors	2	1	0	3
Total	40	27	7	74

Note. DOE = Department of Education
DOH = Department of Health

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Table 11

Changes Administrators Feel Should be Made to Improve Related Services

	TOTAL
ADMINISTRATION	
Increase funds for qualified staff who provide direct svcs.	5
Separate staff who evaluate vs. provide direct svcs.	2
Integration of related services into classroom	1
Utilize advisory functions of DOH more	1
More social work services for families	1
Improve communication within the DOE	1
Improve equity of services	1
Take IEP procedures more seriously	1
Use experienced diagnostic resource teacher trained in interdisciplinary approach	1
Create position for inservice workshops	1
Test alternative delivery systems	1
View related services as key factors in educational program	1
IMPROVE/INCREASE INCENTIVE	
Raise salary	3
Establish permanent positions	2
Incentives for geographic isolates	1
Career laddering opportunities	1
Rework reward system; focus on personal, professional satisfaction	1
TRAINING	
Inservice training	3
Establish OT/PT programs at University	3
Educational orientation	1
For principals and counselors in IEP related services	1
For teachers, aides	1
INTERAGENCY COOPERATION	
Related services better placed within the DOE	5
More articulation, cooperation needed	3
RESEARCH	
Effectiveness data needed	2
Better definition for related services	2
Study to improve the related service system	1
Better monitoring of personnel	1
Define relationship between related svcs. and educational objectives	1
IMPROVE WORKING CONDITIONS	
Alleviate high caseloads	4
PARENT INVOLVEMENT	3
MODIFY THERAPY SERVICES	2

training and preparation received by mental health professionals was usually perceived as comparatively inferior to the training and preparation provided to other related service professionals.

Speech therapists are generally perceived as being available to work with or provide services to students. The majority of administrators rated the availability level of physical therapists and mental health professionals at a significantly lower level.

Most administrators felt that occupational therapy, physical therapy, and speech therapy were effective. In contrast, the majority of respondents did not feel that mental health services were effective.

Almost one half of the administrators (45%) indicated that occupational therapy, physical therapy, and speech therapy have improved in the last 5 years, while less than one third (30%) displayed a similar opinion regarding mental health services.

Administrative decision-makers outside the State Departments of Health and Education consistently provided the lowest ratings regarding related service effectiveness, availability of related service providers, and quality of training obtained by these same professionals.

Caseload levels were perceived as being quite high for all related service areas studied. The situation was seen as especially acute within occupational and physical therapy, but mental health professionals were also considered to have high caseloads.

Four major factors identified by administrators as major contributors to the difficulty in filling vacant positions were (a) current inadequate salary scales, (b) inadequate training opportunities, (c) poor working conditions, and (d) a difficult recruitment/hiring process.

Similarly, administrators were asked to identify factors that act as major contributors to problems associated with turnovers. Four major factors were extracted from the data. In order of cited frequency, these four factors were (a) poor working conditions, (b) an inadequate salary scale, (c) the attractiveness of employment in the private sector, and (d) other insufficient incentives. "Other insufficient incentives" referred primarily to the absence of career advancement opportunities. Results from the present study are consistent with research findings by Harkson et al. and Broski and Cook.

Data gathered on administrators' perceptions on research needs point to the importance of identifying or developing appropriate measures of effectiveness. Nearly 80% of the administrators queried indicated a need for such outcome measures.

Perceptions of special education related service decision-makers indicate a fairly effective, stable, and generally improved delivery system that typically has required service providers to carry high caseloads. From the perspective of the administrator, however, the weakest therapeutic service in the related service system appears to be mental health. Ratings on service quality, effectiveness, availability, and training were consistently and distinctly lower for mental health services.

A consistent finding of the survey is the inadequacy of present salary levels and other employment incentives. The problem appears to be circular. Limitations in delivering services are due in large part to the current high student therapist ratios. Such ratios are, in turn, a consequence of both the limited number of available positions, and the State's inability to attract and retain sufficient personnel who opt for employment within Hawaii's private sector or the continental U.S. where the salary and benefits are better, more career opportunities abound, and recruitment and hiring practices presumably are less problematic. With limited human resources in related services becoming a problem nationally, the circle completes itself, and the handicapped student population must be serviced by an even more limited supply of therapists and clinical psychologists and social work professionals.

Organizations representing related service personnel such as the American Occupational Therapy Association and the American Physical Therapy Association expect nationwide personnel shortages to continue and intensify in the near future (AOTA, 1984; APTA, 1985). In Hawaii, similar trends are expected, but the situation may be more acute due to geographical, economical, and organizational factors. Hawaii is geographically isolated from major training and educational centers located on the continental United States. Additionally, some of the logistical problems inherent in providing services to students on different islands are difficult to overcome. Hawaii State legislators hold the purse strings that fund positions for related service providers. Budget and finance professionals manage the appropriated funds. Successful bids for additional appropriations hinge upon available funding sources, judicious presentations on related service needs at legislative hearings, and political adeptness of related service administrators.

Organizationally, speech (and language and hearing) therapy services are provided by speech therapists and communication aides through the State Department of Education. All of the other related service providers are employed through the State Department of Health. When personnel are needed, recruitment and hiring practices are handled by the State Department of Personnel Services and the respective personnel branches within the State Departments of Health and Education.

Other major problems that affect position vacancies and turnovers, which in turn influence the delivery of related services, include inadequate training opportunities in Hawaii, poor working conditions, and the attractiveness of private sector employment. These categories do not represent mutually exclusive divisions as exemplified by the relatedness of insufficient incentives such as salary and the lure of employment in private industry.

IV. SERVICE PROVIDER'S VIEWS ON POSITION VACANCIES, TURNOVERS, AND EMPLOYMENT

INTRODUCTION

The purpose of this study was to gather information on (a) factors that influenced individuals to terminate their respective related service professional positions, (b) perceptions of these same individuals regarding their employment as related service professionals, and (c) their concerns and suggestions regarding the effectiveness of related services. Information gathered in this study should be taken in context and compared with the information gathered from two previous studies conducted by the AIRS Project (a) Hawaii's Special Education Related Services: Statistics on Personnel Vacancies and Turnovers, and (b) Related Services in Special Education: The Administrator's Perspective.

METHOD

Participants

Results of the present study are based upon the responses of 30 survey respondents. The respondents included speech pathologists who had left their positions between September 1982 and April 1985 and other related service professionals who had left their positions between January 1983 and December 1984.

The following is a breakdown of previous related service positions of the respondents:

Speech Therapist -	15	(50%)
Occupational Therapist -	5	(17%)
Occupational Therapy Assistant (COTA) -	2	(7%)
Physical Therapist -	5	(17%)
Clinical Psychologist -	2	(7%)
Psychiatric Social Worker -	1	(3%)
TOTAL	30	(100%)

Procedure

Individuals who had left their positions were identified through their respective personnel departments. The Department of Education employs speech therapists, and Department of Health employs professionals in occupational therapy, physical therapy, and mental health (clinical psychologists, psychiatric social workers). The Department of Health mailed surveys provided by AIRS Project staff to employees who had left their positions. AIRS Project staff were not supplied with a list of those individuals.

A 24-item survey questionnaire was mailed in November 1985 to 78 individuals. The survey instrument included items pertaining to employment history, reasons for terminating employment, ratings on a number of aspects regarding employment as a related service professional, and recommendations for improving special education related services. A copy of the instrument is attached (Appendix D).

RESULTS

A total of 30 out of 78 survey questionnaires were completed and returned (38.5% return rate). Another 16 (20.5% of original mail out) questionnaires were undeliverable.

Demographics

Of the 30 respondents, 50% (n=15) had left Department of Education speech therapist positions. Other respondents had left Department of Health positions as physical therapists, occupational therapists, certified occupational therapy assistants, clinical psychologists, and psychiatric social workers. Approximately 77% (n=23) had not changed their profession in subsequent employment.

Of the 30 related services professionals sampled, 70% (n=21) had left permanent positions. Seventeen out of 18 respondents had worked on a full-time basis.

Fifty percent (n=15) had worked for the Department of Education; the other 50% (n=15) had previously been employed in Department of Health related service positions.

Seven respondents (25%) terminated a related service position in 1983, but almost twice that number left in 1984 (13 of 30, 46.4%). Information for 1982 and 1985 pertains only to speech therapists and does not include the entire year. The survey results indicate that one speech therapist left during the period September to December, 1982, while seven speech therapists left during January to April, 1985. Two individuals did not respond to the inquiry on "date of termination."

Twenty percent (n=6) of the participants had been employed in their previous position for 1 year or less. Sixty-three percent (n=19) had been employed for 1-4 years. Approximately 17% (n=5) were employed for more than 4 years.

Rating Scales

Table 12 contains summary results of descriptive statistics from each of the items requesting participants to rate various aspects of their employment or profession. Each of the nine ratings are analyzed across agency affiliation (Department of Health or Department of Education).

When asked to rate how satisfying their previous employment was overall, 48% of the 29 service providers who responded indicated positive satisfaction levels; 28% indicated their satisfaction levels were somewhat negative.

Table 12

Mean Ratings of Aspects of Previous Employment by Therapists or Clinicians Who Left Related Service Positions

	Department of Education		Department of Health		Total	
Aspects of Previous Employment	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Job satisfaction with previous position	3.6	(1.9)	4.7	(1.1)	4.1	(1.6)
Relationship with other therapists/clinicians	5.9	(1.0)	5.5	(1.3)	5.7	(1.2)
Relationship with supervisors	4.6	(2.1)	4.6	(1.8)	4.6	(2.0)
Relationship with clients	5.6	(1.2)	5.7	(.9)	5.7	(1.0)
Control over decision making of daily services	4.8	(1.7)	4.6	(1.2)	4.7	(1.4)
Human environment control over daily services	4.15	(1.5)	5.1	(.9)	4.6	(1.3)
Influence of physical environment over daily services	5.0	(1.5)	4.8	(1.3)	4.9	(1.4)
Adequacy of professional training	5.9	(1.1)	5.7	(1.2)	5.8	(1.2)
Helpfulnesss of inservice training	3.0	(2.0)	4.3	(1.5)	4.3	(1.9)

Note. Mean ratings based on a scale from 1 to 7.

When asked to rate how satisfying their relationships with other therapists or clinicians were, 89% of the total sample who responded (n=28) reported varying positive levels of satisfaction; 7% reported dissatisfaction on a moderate level only.

When asked to rate how satisfying the relationship with their supervisor(s) was, 61% of the total sample who responded (n=28) reported they were satisfied with such relationships; approximately 29% reported they were not satisfied with their relationships with their supervisor(s).

Of the total sample who responded (n=28) to the query on relationship with clients, almost 86% indicated some level of satisfaction; none of the respondents rated their satisfaction levels as negative.

Of the total sample who responded (n=28) to the query on degree of control over one's own decision making or routine delivery of service, 61% indicated they had some control over such decisions; 14% indicated they had not had more than an average degree of control over such matters.

Of the total sample who responded (n=28) to the query on the degree to which the human environment (such as parents, staff members or supervisors) had an influence or control over daily delivery of services; 57.1% attributed some degree of influence to such sources.

Of the total sample who responded (n=29) to the query on the degree to which the physical environment (i.e., facilities, geography) had an influence on daily delivery of services, 72.4% attributed some degree of influence to such sources.

When asked to rate the adequacy of their professional training in providing skills needed in the previous job, 89% of the 29 individuals responding (n=29) reported their preservice training was adequate; 7% indicated their professional training was inadequate.

When asked to rate the degree to which inservice training and support received was helpful in providing quality service to the disabled, 37% reported such training was helpful; 44% indicated inservice training and support was not helpful in this regard.

Caseload

Table 13 shows a cumulative breakdown of typical weekly caseloads (direct services) reported by all related service providers combined. Table 14 displays a cumulative distribution of the average number of direct service sessions provided per week by related service providers (all related service areas inclusive).

Figure 7 shows the average length of typical direct service sessions reported by service providers. The most frequently reported length was 30 minutes (n=13 of 39 respondents).

Respondents were also asked to estimate the average number of consultation sessions they provided per week. Figure 8 displays the mean and range of responses according to related service area.

Table 13

Cumulative Distribution of Typical Weekly Caseloads (Direct Services Only) Reported by Therapists and Mental Health Clinicians Who Had Left Their Positions

Caseload Size	Frequency	Percent	Cumulative Percent
1 - 10	1	4.0	4.0
11 - 20	3	12.0	16.0
21 - 30	4	16.0	32.0
31 - 40	12	48.0	80.0
41 - 50	3	12.0	92.0
51 - 60	1	4.0	96.0
61 +	1	4.0	100.0
TOTAL	25	100.0	100.0

Note. Missing cases = 5; Response percent = 83.3%

Table 14

Cumulative Distribution of the Average Number of Direct Service Sessions Provided Per Week

Number of Sessions	Frequency	Percent	Cumulative Percent
1 - 10	1	5.9	5.9
11 - 20	5	29.4	35.3
21 - 30	4	23.5	58.8
31 - 40	4	23.5	82.4
41 - 50	2	11.8	94.1
51 -	1	5.9	100.0
TOTAL	17	100.0	100.0

Note. Missing cases = 13; Response percent = 56.7%

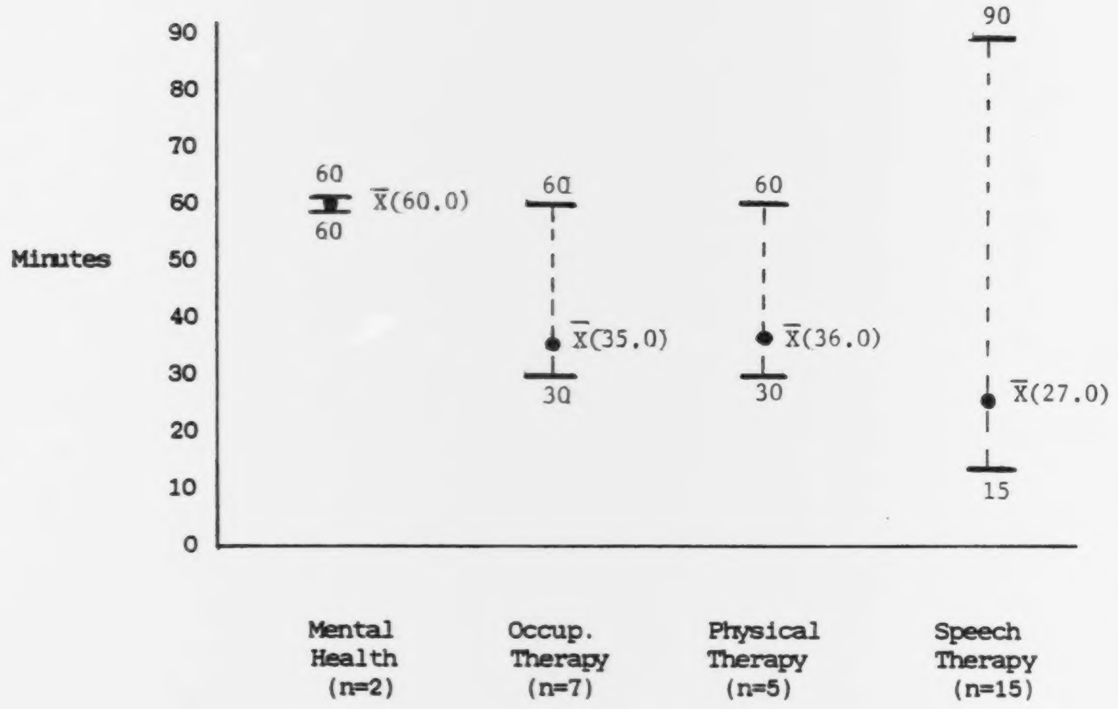

Figure 7. Mean length and range of typical direct service sessions reported by service providers who had left their positions.

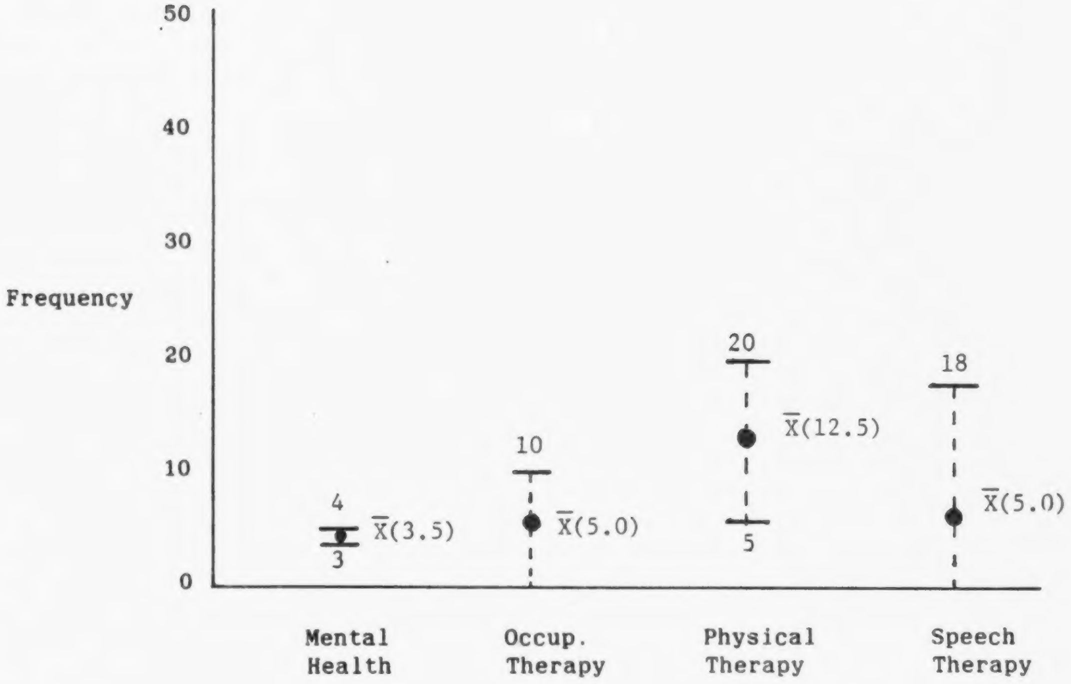

Figure 8. Mean number and range of consultations per week estimated by previously employed therapists in four related services.

Participants were asked what percentage of the consultative services they provided consisted of discussion only (describing, questioning, and answering), and what percentage of the consultative services they provided consisted of demonstrations with their clients. Table 15 presents the combined information for the 26 professionals who responded.

Open-ended Items

Service providers' primary reasons for leaving their related service positions are tabulated in Table 16. Similarly, service providers' other reasons for leaving their related service positions are tabulated in Table 17. Frequency counts of changes recommended by service providers to improve related services are listed by functional areas (Table 18).

DISCUSSION

Why did these related service providers leave their positions? The primary reasons for leaving one's position varied without any one particular reason being most prominent, although the most frequent response referenced problems with the recruitment/hiring process. Several individuals in the sample were unable to continue employment because the job position was of a temporary nature, or because completing application forms was problematic, or because State budget cuts affected the position. One individual could not continue because of the legislative requirement upgrading minimum qualifications for employment. Other primary reasons for leaving included the inadequacies in the salary scale, a competitive market in the private sector, poor working conditions, and unspecified professional dissatisfactions. Three Department of Health individuals alluded to dissatisfaction with the lack of administrative support or frustration with bureaucratic processes. Several individuals reported reasons of a more personal nature such as pregnancy, motherhood, or a preference to be closer to friends and relatives.

When respondents were asked to identify other (i.e., secondary) reasons for leaving, however, the pattern of responses was quite different. In general, the responses of service providers reaffirmed administrators' perceptions of inadequate incentives for initial or continued employment as a major factor (Hirata, McClelland & Wada, 1986a). The most troublesome aspect for related service professionals (primarily speech therapists) was "working conditions" of employment. Examples of poor working conditions cited included long hours, a year-long schedule, long distances to travel from site to site, and lack of suitable working space at school sites. Other reasons for leaving included dissatisfaction with the salary scale, unproductive relationships with parents and teachers, inadequate inservice training, a cumbersome recruitment/hiring process, and other insufficient incentives.

Less than 50% of the 29 service providers rated their previous employment as satisfying overall. Almost 30% indicated their satisfaction levels to be somewhat negative. Department of Education respondents gave lower satisfaction ratings than their Department of Health counterparts. On the other hand, virtually all service providers seemed be quite satisfied with their relationships with other therapists or clinicians. Although many respondents reported an above average satisfaction with

Table 15

Percentage of Consultation Services Consisting of Discussion and Demonstration

Percent of Consultation Using Discussion Only		Percent of Consultation Using Demonstration	Frequency	Percent of Sample
91 - 100	and	0 - 9	7	26.9
81 - 90	and	10 - 19	5	19.2
71 - 80	and	20 - 29	1	3.8
61 - 70	and	30 - 39	0	0
51 - 60	and	40 - 49	1	3.8
41 - 50	and	50 - 59	5	19.2
31 - 40	and	60 - 69	1	3.8
21 - 30	and	70 - 79	2	7.7
11 - 20	and	80 - 89	2	7.7
0 - 10	and	90 - 100	2	7.7
TOTAL			26	100.0

Table 16

Frequency Tabulation of Service Providers' Primary Reasons for Leaving Their Related Service Positions

Reasons	Department of Education	Department of Health	Total
Recruitment/ hiring process	2	4	6
Salary scale	2	2	4
Competitive market	1	3	4
Relationship with administration/ bureaucracy	0	3	3
Working conditions	1	1	2
Professional dissatisfactions (unspecified)	2	0	2
Dissatisfactions with service delivery model	1	0	1
Other insufficient incentives	1	0	1
Relationships with non-supervisors (i.e., parents, teachers, students, team members, etc.)	1	0	1
Inadequate training/ inservice	0	0	0
Other factors	3	2	5
Total	14	15	29

Table 17

Frequency Tabulation of Service Providers' Other Reasons for Leaving Their Related Service Positions

Reasons	Department of Education	Department of Health	Total
Working conditions	10	2	12
Dissatisfactions with service delivery model	4	5	9
Relationship with administration/ bureaucracy	4	4	8
Salary scale	3	1	4
Relationships with non-supervisors (i.e., parents, teachers, students, team members, etc.)	2	2	4
Recruitment/ hiring process	1	2	3
Other insufficient incentives	2	1	3
Inadequate training/ inservice	3	0	3
Professional dissatisfactions (unspecified)	1	1	2
Competitive market	0	0	0
Other factors	1	0	1
Total	31	18	49

Note. Individuals may have contributed multiple responses.

63

Table 18

Therapist Recommendations for Improving Related Services, by Major Functional Area

	DOE	DOH	TOTAL
PROGRAM CHANGES			
Roles, Duties and Responsibilities	3	5	8
Therapists do school level screenings			
Designated speech pathologists to conduct evaluations			
Consultative services at high school level			
Better role definitions			
Move toward consultative based therapy			
Standardization of eligibility criteria			
Therapist who provides therapy should do evaluation			
Training and Preparation	3	1	4
More opportunities to attend			
Annual inservice with new subjects			
More inservices			
Caseload and Students Served	1	3	4
Limit caseload size			
Smaller teacher-student ratio for Severely Multiply Handicapped			
More Parent Involvement	1	0	1
Provide After-school Gross-Motor Programs or Therapy	0	1	1
Improve Physical Education in each Classroom	0	1	1
IMPROVE WORKING CONDITIONS	9	2	11
More adequate site for therapy			
Decreased driving time			
Therapists should stay at school for meetings			
Use of funds to purchase needed equipment and supplies			
ADMINISTRATION/SUPERVISION	5	5	10
Have a knowledgeable administration			
Use district-level supervisor			
Qualified supervisors provide regular feedback			
Reduce/streamline paperwork			
Integration of DOH and DOE			
INCENTIVES	4	1	5
Salary factors			
SERVICE PROVIDERS	2	3	5
Obtain better qualified personnel			
Place 1 speech pathologist in each school			
Obtain more therapists			
TOTALS	29	24	53
No Response	1	2	3

relationships with supervisors, almost 29% indicated they were not satisfied with such relationships. All of the respondents indicated their relationships with clients (students) were rewarding.

How much control did the therapists and clinicians feel they had over their own decision-making or routine delivery of services? Most respondents indicated they had some control over such decisions. Respondents attributed a higher degree of influence to the physical environment (such as facilities or geographic differences) than to the human environment (such as parent, staff members, or supervisors).

Almost 90% reported their preservice training was adequate for servicing handicapped students. This finding is consistent with views of administrators in Hawaii (Hirata, McClelland & Wada, 1986a). However, administrators in that study indicated that related service provider training and preparation needed improvement.

Although the therapists and clinicians felt their preservice or professional training had been adequate, inservice training was not perceived as adequate to their needs. Department of Education speech therapists provided the lowest ratings of inservice training.

Most respondents reported providing services to individual students twice a week. Average length per direct service session ranged from just under 30 minutes (speech) to 1 hour (mental health). There were relatively few reported consultative sessions held per week in all four related service areas. Physical therapists reported the highest number of consultations (typically, about 12 to 13 sessions per week). When consultative services were provided, more often the assistance was provided in a verbal, discussion-type format, although a number of individuals also used the demonstration method.

What kind of changes do therapists and clinicians recommend to improve related services? Many of the recommendations pertain to program changes. These include improvements in specifying duties or clarifying roles, more opportunities for inservice training, and limiting or reducing caseload size. Also recommendations were made to improve working conditions and administrative support systems. Increasing salary levels and attracting more (qualified) therapists/clinicians to the respective professions were two additional recommendations made by service providers. An identical question posed to administrators resulted in similar recommendations (Hirata et al., 1986a).

A number of limitations of the present study should be pointed out. First, although the 38.5% return rate is quite typical for a survey study, the postal service was unable to deliver the questionnaire to approximately 20% of the original pool of potential respondents. Second, most respondents were re-employed in the same profession, and it is not known how many had left the State system and were subsequently employed in the Federal or private sectors. Third, responses to a few items should be interpreted as rough estimates due to a relatively high non-response rate to such items. Of particular concern is the tentative inferences that can be based upon two or three responses by mental health providers.

V. THE AIRS FUTURES CONFERENCE ON SPECIAL EDUCATION RELATED SERVICES

INTRODUCTION

A Futures-Oriented Planning Conference sponsored by the AIRS Project was held at the Kaimana Beach Hotel, Honolulu, Hawaii, on February 26, 1986. This conference was designed to examine environmental factors affecting the provision of special education related services and to specifically focus upon the high rate of turnovers and vacancies in related service provider positions in Hawaii. These positions included: speech therapists, occupational therapists and assistants, physical therapists, clinical psychologists, and psychiatric social workers.

The purpose of this conference was to enable decision makers in Hawaii State agencies to more clearly identify and prioritize issues regarding turnovers and vacancies in the related service fields and to develop a set of strategies to overcome problems associated with those issues. Thirty-three individuals from the Department of Education, the Department of Health, the Department of Social Services and Housing, the Department of Personnel Services, and the University of Hawaii were present. Conference participants were first presented with background information gleaned from three previous studies conducted by the AIRS Project:

1. Hawaii's Special Education Related Services: Statistics on Personnel Vacancies and Turnovers.

2. Related Services in Special Education: The Administrator's Perspective.

3. Related Services in Special Education: Service Providers' Views on Position Vacancies, Turnovers, and Employment.

After presentation of background information, conference participants were assigned to one of four discussion groups with the mandate to identify (a) relevant issues or problems contributing to high rates of personnel turnover and vacancies, (b) factors facilitating or hindering resolution of specified problems, and (c) strategies to overcome or provide a resolution to previously specified problems. Titles of the four discussion areas were:

1. Attracting and Keeping Qualified Personnel.
2. Initiating Quality Inservice Training.
3. Improving Administrative Support Systems.
4. Improving Working Conditions and Developing Cost-effective Quality Programs.

RESULTS

Summary of Discussion Group #1
(Attract and Keep Qualified Personnel)

The first discussion group categorized problems in the following order (a) working conditions, (b) recruitment procedures and incentives, and (c) other problems.

Working Conditions

A lack of competitive salaries provided in the public sector has continued to be a major factor contributing to high rates of turnovers and vacancies in the related service system. These salaries are not comparable to similar or identical positions in private industry or to public employment on the mainland.

A lack of adequate incentives and career ladders does not make related services a particularly glamorous or attractive area for employment. Differences between the Department of Health (DOH) and the Department of Education (DOE) in terms of career ladders further complicate the situation.

The lack of available facilities continues to be an important concern. The lack of available facilities is not always related to the age of the school nor is the problem consistent from one year to another.

A significant percentage of the related service population are individuals who are chronically ill or who have chronic handicaps and have poor prognosis for improvement. This results in an emphasis within therapy upon habilitation as compared to rehabilitation.

Recruitment Procedures and Incentives

Many professional positions with State agencies require State of Hawaii residency and U.S. citizenship. Such requirements are considered to be obstacles to employment in Hawaii.

Often it takes 9 months or more for the Department of Personnel Services (DPS) to process emergency hire positions to permanent hire status. Individual State Departments have idiosyncratic needs in terms of position classification and education, training, and experience of desired applicants.

Other Problems

The University of Hawaii does not provide training programs for occupational or physical therapists. Occupational therapists and physical therapists receive their professional training on the mainland. Individuals within the group asserted that even speech therapists trained at the University of Hawaii may not be thoroughly prepared for available positions in Hawaii.

Some positions have been eroded because they remain vacant for extended periods. Occasionally, these positions are lost because of budgetary restraints, or because qualified applicants are simply not available.

Discussion Group Recommendations

1. Establish a method of effectively informing administrators of the impact of facility overcrowding upon the provision of related services in the schools. Minimum standards need to be met regarding the physical conditions under which therapy is provided.

2. Establish recruitment incentives such as financial renumeration to therapists who move to islands where shortages exist or to therapists who move to Hawaii from the mainland.

3. Provide financial incentives beyond incremental pay raises to those who remain in their professional positions beyond a specified number of years.

4. Exempt related service positions from State residency and U.S. citizenship requirements.

Summary of Discussion Group #2
(Initiate Quality Inservice Training)

The rate of turnovers and vacancies is not dependent on inservice activities alone. Other factors such as work conditions, morale, unions, and contracts were thought to be important determinants in personnel statistics.

Four problem areas regarding inservice training were identified and prioritized (a) a limited number of training programs, (b) attitudes and values of related service providers, (c) logistics, and (d) publicity about inservice training.

Limited number of local training programs

One of the major obstacles to quality inservice training has been the scarcity of local training programs and local professional resources available, especially in the area of physical therapy and occupational therapy. However, various professional associations and existing programs do provide opportunities for inservice training. An example is the Ho'okoho program within the Department of Education which serves as an inservice resource for special education teachers.

Attitudes/Values

Attitudes and values held by staff significantly affect the quality and results of inservice training. Without appropriate values and attitudes in participants, inservice training will not be successful or effective. Those who most need inservice training, are often least likely to participate.

Logistics

Four logistical problems obstruct improvements in the quality of inservice training programs. The first is the fact that related service professionals often have insufficient available time for inservice training. Secondly, a lack of state funds to implement programs is a serious handicap. Thirdly, neither professionals nor programs possess funds for travel to attend inservice on other islands or on the mainland. Finally, administrative constraints (such as employee contracts) may inhibit participation in inservice programs.

Publicity and Inservice Training

Agencies providing whatever inservice training programs exist have not established effective publicity about those programs. In addition, where training opportunities exist, participation is often limited to a few specific groups. Finally, coordination of inter-agency or inter-organizational activities has been difficult to establish.

Discussion Group Recommendations

1. Conduct research into the impact of work conditions, unions, and employee contracts upon satisfaction with employment.

2. Conduct a needs assessment of inservice requirements and resources.

3. Explore the possibility of Ho'okoho as an inservice resource.

4. Strengthen the role of the University of Hawaii in providing support and technical resources to inservice training of related service professionals.

5. Develop inservice training as a component of continuing education, providing credit for completion.

6. Develop a system or method of coordinating inservice programs in State agencies.

Summary of Discussion Group #3
(Improve Administrative Support Systems)

Three broad areas of concern regarding the improvement of administrative support systems were outlined. These were (a) establishing a commitment to related services, (b) developing communication and working relationships, and (c) overcoming the crises of insufficient services.

Commitment to Related Services

A stronger commitment to related services for special education students is needed but is felt to be particularly lacking in the mental health area. On a positive note has been the recent change in the organization of the Mental Health Division resulting in a less centralized, and more responsive decision-making process. Many of the decisions concerning resource allocation are now left to the chief of each respective mental health center.

Communication and Working Relationships

Often state level meetings result in useful information and ideas that are short-lived. Information generated at such meetings often fails to reach the professionals who actually implement programs. Conducting administrative training and adopting models of successful multi-disciplinary and multi-agency working relationships could improve working relationships between different agencies.

Insufficient Services

Vacancies and turnovers limit the amount of services that can be provided. Even if there were no vacancies, there could still be a severe shortage of services since, presently, there are inadequate numbers of service providers in all related service areas.

A lack of data on additional needs is an obstacle to improving the quality and quantity of services.

Discussion Group Recommendations

1. Establish a closer working relationship between Department of Education administrators and chiefs of mental health centers and consult on the following areas:
    a. Use of resources available in the mental health catchment areas.
    b. Development of priorities and quidelines with respect to mental health services to students.
    c. Disseminate newly established priorities and quidelines throughout the Department of Education and the Mental Health Division of the Department of Health.
    d. Strengthen an interdisciplinary approach to service delivery and problem resolution.

2. Develop a system to improve the dissemination of information gathered at state level meetings to direct service providers.

3. Re-issue the DOE Newsletter (Education Handicapped Quarterly) to facilitate communication between state and school level professionals.

4. Use Ho'okoho to enable special education teachers to improve their understanding of occupational and physical therapies.

5. Systematically document data on legislative actions, Department of Budget and Finance decisions, and assorted procedures and quidelines to serve as a database for administrative decisions.

6. Explore the possibility of accessing additional funding through under-utilized resources such as Medicaid.

Summary of Discussion Group #4
(Improve Working Conditions and Develop Cost-Effective Quality Programs)

Discussion group #4 had a dual task. Firstly, it considered possible means through which working conditions could be improved for related service providers. Secondly, it examined ways of developing cost-effective quality programs.

Working Conditions

The group listed the following problems regarding working conditions: (a) therapists typically handle large caseloads and have difficulty in taking new cases or in providing additional services to students already on their caseloads, (b) therapists often have difficulty achieving a sense of personal satisfaction because of administrative and parental pressures, (c) lack of parent support and a lack of home/school therapy coordination reduces the effectiveness of therapy, (d) teachers are often unable to provide support or carryover to direct therapy services, and (e) the location of therapy stations in unsuitable sites in the school undermines therapist morale and impedes therapy.

Cost Effective Quality Programs

Three possibilities were identified to help develop cost-effective quality programs. These were (a) identification and implementation of alternative service delivery models, (b) improvement of early intervention and mainstreaming of handicapped students, (c) and use of Medicaid funds for diagnosis and treatment.

Most agencies share a common philosophy or goal of providing quality services to students. To Hawaii's advantage is the centralization of service delivery in the state which greatly facilitates effectiveness of the delivery of services.

Discussion Group Recommendations

1. Develop possible alternative delivery service model such as:
    a. Integration of therapy in the classroom as opposed to pull-out.
    b. After-school programs.
    c. Summer programs.
    d. Use of para-professionals for all related services.

2. Initiate a review of various service delivery models and a systematic analysis of each model's advantages and disadvantages.

VI. SUMMARY STATISTICS ON SPEECH/LANGUAGE THERAPY AS A RELATED SERVICE IN HAWAII, SPRING, 1986

INTRODUCTION

There is a need for descriptive information on (a) who is receiving related services (how many and what types of students by student handicapping condition, sex, age, school attended, etc.), (b) the types of related services being provided (individual versus group therapy, consultation versus direct services, etc.), and (c) the frequency, duration, and cost of service. This type of descriptive information can be invaluable in assisting decision makers to distribute resources, establish service priorities, and plan to meet changing needs and service requirements.

Much descriptive information on the extent to which related services are being provided is found in therapist monthly caseload reports. The purpose of the study was to extract relevant information on the extent to which speech therapy services were being provided as a related service in Hawaii in the spring of 1985. Data gleaned from this review can (a) provide a reasonably accurate estimate of how widely services were provided, and (b) establish a basis for further examination of descriptive information needs.

METHOD

The Assessment and Improvement of Related Services (AIRS) Project, reviewed monthly Speech, Language, Hearing Statistical Reports completed by speech therapists in six of the seven educational districts in Hawaii. These reports are regularly forwarded to the Department of Education, Special Education Section for compilation and analysis. A total of 86 records compiled by 85 speech therapists were reviewed. Two therapists submitted a statistical report of joint services in one school in addition to their individual statistical reports. Report forms from speech therapists in one district were not forwarded to the Special Education Section. However, personnel in that district maintain their own data files on speech therapy. Relevant data from that district were supplied by a speech/language resource person to the AIRS Project staff. Two different data sources were therefore utilized.

Project staff attempted to collect the data reported on the April monthly statistical reports. However, five therapists neglected to forward April monthly statistical reports to the Special Education Section. March or May monthly reports were therefore reviewed. Of a total of 86 monthly reports completed by therapists and analyzed by the project, 4 summarized March services, 81 reports summarized April services, and 1 report was a review of May services.

Data elements on the monthly statistical reports from the speech therapists in the six districts which were reviewed included:

1. District name
2. Therapist name
3. Total number of special education students receiving speech therapy as a related service further summarized by student handicapping condition.
4. Month of report.

Data elements supplied by the seventh district from which statistical reports were unavailable for review included the first and third elements.

RESULTS

Table 19 displays the number of speech therapist statistical reports forms reviewed from six districts. A few therapists indicated that they only provided diagnostic services, therefore, their report forms were not included for review. In Maui District, two therapists submitted a combined report for one school in the town of Hana, in addition to reports for their other schools. Therefore in that district, 10 therapists produced 11 statistical reports. Statistics for Maui district reflect an average per 11 reports and an average per 10 therapists where the distinction is appropriate. Twenty-four therapists from the seventh district (Leeward District) provided direct services. A total of 109 therapists was used as a basis for computing percentages and averages where this procedure was appropriate.

Table 20 displays the number of special education students in each eligibility category reported to be receiving speech therapy as a related service in seven districts. Statewide, a total of 2279 special education students were reported to be receiving speech therapy as a related service from 109 reporting therapists. The statewide average related service caseload size per therapist was almost 21 students. The range in the number of total students receiving speech as a related service reported per therapist was from a low of 4 students to a high of 66 students. Deaf and hard of hearing categories (HOH) are collapsed in the table because therapists report those categories in the same column on their monthly statistical reports. Orthopedically handicapped (OH) and other health impaired (OHI) categories are collapsed in the table because they are reported to the U.S. Department of Education as one category. Therapists, however, reported the OH and OHI students in separate columns.

Table 21 presents a breakdown, by district, of the number of students in each special education subpopulation who were reported to be receiving speech therapy. The total number of special education students in each district receiving speech as a related service is displayed at the bottom of the table. The total number of students reported per district ranged from a low of 77 to a high of 555.

Over 50% of those students reported to be receiving speech as a related service are in the learning disabled (LD) category. An analysis of district percentages shows that the LD category comprises over 50% of the speech therapy as a related service population in four of seven districts (Central, Maui, Kauai, Windward). In the remaining three

Table 19

Number of Monthly Speech, Language, Hearing Statistical Reports, Six Districts

District	Number of Reports
Central	21
Maui	11
Kauai	8
Windward	14
Hawaii	8
Honolulu	24
Total	86

Note. Monthly statistical reports from Leeward District were unavailable.

Note. Ten therapists in Maui District submitted 11 statistical reports.

Table 20

Special Education Students Reported Receiving Speech/Language Therapy as a Related Service in Hawaii, Statewide Totals

Handicapping Condition	Frequency	Percent	Average Per Therapist	Range Per Therapist (6 Districts)
MIMR	228	10	2.09	0 to 20
MOMR	208	9	1.90	0 to 15
SMR	61	3	.56	0 to 6
PMR	13	<1	.12	0 to 4
LD	1154	51	10.58	0 to 45
EH	83	4	.76	0 to 7
PS	3	<1	.03	0 to 2
BLIND	4	<1	.04	0 to 1
DEAF/HOH	133	6	1.22	0 to 24
OH/OHI	119	5	1.09	0 to 20
DB	4	<1	.04	0 to 3
SMH	112	5	1.03	0 to 16
LI	149	6	1.36	0 to 20
Total Handicapped Population	2279	100	20.90	4 to 66

Table 21

Special Education Students Reported Receiving Speech/Language Therapy as a Related Service in Hawaii (District Breakdowns)

Handicapping Condition	District						
	Central	Maui	Kauai	Windward	Hawaii	Honolulu	Leeward
MIMR	50	29	9	19	28	50	43
MOMR	54	20	2	26	22	42	42
SMR	9	2	1	11	11	6	21
PMR	2	1	0	0	2	5	3
LD	316	173	46	180	88	145	206
EH	18	13	2	27	6	3	14
PS	0	2	0	0	1	0	0
BLIND	1	0	0	0	0	2	1
DEAF/HH	23	11	9	1	27	44	18
OH/OHI	15	2	6	2	15	40	25
DB	3	0	0	0	0	0	1
SMH	8	19	1	17	11	19	37
LI	41	34	0	11	7	22	34
Total	555	306	77	296	218	382	445

districts, learning disabled students account for less than 50% of the related service population but still remain the largest group receiving the service.

Table 22 displays the average number of special education students reported on therapist caseloads. Average caseload per therapist in each district is shown at the bottom of the table. The average caseload per therapist ranged from 9.63 (Kauai District) to 30.60 (Maui District).

Table 23 exhibits the percentages of each special education subpopulation receiving speech as a related service in each of the 7 districts.

The percentage of special education students receiving speech as a related service in each district ranged from 16% (Kauai District) to 39% (Maui District). The statewide percentage was 22% (2279 out of 10,267 students).

Although the LD category accounted for over 50% of the special education students receiving speech as a related service, 15% of the total LD population received speech as a related service (1154 out of 7538 LD students).

DISCUSSION

The present study provides a descriptive "snapshot" analysis of the provision of speech therapy as a related service in Hawaii. Further examination of data from a calendar-year time frame is necessary to provide a more complete and accurate "picture" of speech therapy as a related service. The "snapshot" was valuable, however, in that it provided a reasonable estimate of the extent to which services were provided in a 1-month time frame.

At any given time in the 1984-85 school year, approximately 2300 special education students received speech therapy as a related service. Related service caseload per therapist averaged almost 21 students. Therapist caseload averages within districts ranged from a low of almost 10 students to a high of over 30 students. Speech therapists also provided services to speech impaired students of whom there were approximately 2300 in the State of Hawaii. Related service caseloads were estimated to be approximately one half of the total caseloads of speech therapists in Hawaii; the other half consisted of speech impaired who received speech as a primary service.

Learning impaired, severely mentally retarded, moderately retarded, and severely multiply handicapped students are the four categories of exceptional students most likely to receive speech therapy as a related service. Partially sighted and blind students are least likely to receive the service. Although 15% of learning disabled students in Hawaii received speech therapy as a related service, they comprised over 50% of the related service caseload.

In several districts, over 100% of specific subpopulations are reported to be receiving services. This apparent distortion can be

Table 22

Average Related Service Caseload Size per Speech Therapist, District Breakdowns

Handicapping Condition	District						
	Central (21)	Maui (11)	Kauai (8)	Windward (14)	Hawaii (8)	Honolulu (24)	Leeward (24)
MIMR	2.38	2.90	1.13	1.36	3.50	2.08	1.79
MOMR	2.57	2.00	.25	1.86	2.57	1.75	1.75
SMR	.42	.20	.13	.79	1.38	.25	1.29
PMR	.09	.09	0.00	0.00	.25	.21	.13
LD	15.04	17.30	5.75	12.86	11.00	6.04	8.58
EH	.85	1.30	.25	1.93	.75	.13	.58
PS	0.00	.20	0.00	0.00	.13	0.00	0.00
BLIND	.04	0.00	0.00	0.00	0.00	.08	.04
DEAF/HH	1.09	1.10	1.13	.07	3.38	1.83	.76
OH/OHI	1.04	.20	.88	.28	1.88	1.84	1.04
DB	.14	0.00	0.00	0.00	0.00	0.00	.04
SMH	.38	1.90	.13	1.21	1.38	.79	1.54
LI	1.95	3.40	0.00	.79	.87	.92	1.42
Total Caseload	26.42	30.60	9.63	21.14	27.25	15.92	18.54

Note. Caseload = number of students

Note. Number in parenthesis below district names indicates number of speech therapists in the district providing direct services

Table 23

Percentages of Special Education Students in 7 Districts Reported Receiving Speech Therapy as a Related Service

Handicapping Condition	District							Statewide
	Central	Maui	Kauai	Windward	Hawaii	Honolulu	Leeward	
MIMR	43	36	19	26	41	20	27	29
MOMR	91	59	15	90	69	47	61	64
SMR	>100	50	50	>100	73	19	>100	75
PMR	66	100	0	0	50	29	25	27
LD	19	31	12	14	10	9	16	15
EH	24	100	20	43	10	3	11	18
PS	0	50	----	0	12	0	0	7
BLIND	11	0	0	----	0	14	10	10
DEAF/HH	85	41	100	41	90	53	>100	52
OH/OHI	26	40	50	11	27	54	37	35
DB	>100	----	----	----	0	0	>100	57
SMH	33	90	9	100	50	44	95	63
LI	>100	>100	0	6	23	92	97	88
Total	27	39	16	19	18	17	24	22

Note. Total excludes speech impaired count.

Note. Numerators = number reported receiving speech therapy as a related service; denominators = number reported in category of handicap.

Note. Maui District contains no DB students; Kauai District contains neither PS nor DB students; Windward District contains neither Blind nor DB students.

accounted for by one or more of several possible factors. Firstly, data on the number of students receiving speech therapy as a related service compiled from monthly statistical reports for March, April, or May were compared with data on the total enrollment of special education students supplied by the Student Information Services in June. Time frames for the data are adjacent but still separate. A few students could have been enrolled or dropped from caseloads in the intervening months. Another possible factor was the fact that different individuals were responsible for the reports to the Special Education Section and to the Student Information Services respectively. They may have used different forms, different procedures, and different guidelines. Students counted under one special education category in one report form to the Special Education Section could have been counted under another category in the report to the Student Information Services.

A number of recommendations can be made based upon efforts conducted in this study:

1. Conduct further investigation into factors that account for variations in service across handicapping conditions and across districts.

2. Review data supplied on speech therapy as a related service from reports submitted within a 1-school-year time frame.

3. Revise monthly statistical reports to collect data on the frequency and duration of service.

VII. SUMMARY STATISTICS ON OCCUPATIONAL THERAPY SERVICES

Currently, there is a need to systematically document the nature and frequency of occupational therapy (OT) services provided to Hawaii's handicapped students. At present, data collection methods for monitoring occupational therapy services consist of manually tabulating (a) summary sheets of monthly service totals, and (b) daily record sheets documenting the date, type and length of therapy service. Information on frequency and extent of different types of OT services to specific types of students has not been readily available.

Some basic and valuable information on services is provided in Annual Reports on services published by the State of Hawaii Department of Health, School Health Services Branch. These Annual Reports contain a section on "School Health Support Services" that provides data on OT referrals, and the number of students receiving OT services, by handicapping condition and district (Hawaii State Department of Health, 1985). The extent of additional information, however, has been quite limited. Information, for example, on the types of services provided and the number of and reasons for cancellation of scheduled therapy sessions has not been available.

The purpose of the study was to retrieve summative information on OT monthly statistics. These descriptive statistics should provide a "snap-shot" view of OT services from a state-wide perspective. The evaluation orientation was that of "input evaluation" in the Context-Input-Process-Product model advocated by Stufflebeam et al. (1971). Descriptive input evaluation data serves as a foundation upon which queries of effectiveness may be addressed.

METHOD

Population

A total of 1170 handicapped students statewide were eligible, in the Spring of 1985, to receive occupational therapy (OT) services from the Department of Health, School Health Services Branch and Crippled Children Services Branch. Seventy-four of the 1170 handicapped students were enrolled in the Jefferson Orthopedic Unit (Honolulu district) and its affiliate, Campbell School Complex Orthopedic Unit (Leeward district). Information on 74 students in both orthopedic units was either unavailable or incomplete. Information was available for the remaining 1096 handicapped students.

OT as a related service is provided to handicapped students who demonstrate a need for assistance in skillful body functioning such as fine motor coordination and sensory-motor integration.

Instruments

Two data collection instruments served as sources for compiling the summary statistics on OT services. The first instrument was a single, monthly summary page that contained information on total number of referrals for evaluation, number of students assigned to caseload, number of students served, and number of evaluations conducted. The number of students served was further categorized by handicapping condition.

The second instrument was the "daily record of therapy services" frequently referred to as the "statistical log." Information available through the statistical log sheets included student information on type and amount of service received, handicapping condition, school, district, therapist classification (therapist or assistant), and number of absences.

Procedure

Project staff reviewed and analyzed monthly summary sheets and daily record of therapy services (statistical logs). A month's worth of information was collected in Spring 1985 for each of the seven districts statewide. Nearly 80% of the data reported were for services provided in the month of April (22 of 28 reports submitted). Where inconsistencies or problems occured in a few reports of April services, information regarding March (5 of 28) and May (1 of 28) services was substituted.

The data extracted from the summary sheets and statistical logs were subsequently coded, and inputted into a computer data file. Data analyses included frequency, descriptive, and cross tabulation procedures.

RESULTS

Report Summaries

Table 24 contains the breakdown, by district, of the 28 report summaries. Descriptive analyses of estimated monthly occupational therapy (OT) services are contained in Table 25. The estimates were based on 28 report summary sheets for Spring 1985 and included information on number of students, number of referrals, and number of evaluations and re-evaluations. Also included were data on the number of teacher-oriented consultations and the number of schools serviced by OT personnel.

Table 26 shows a breakdown, by handicapping condition, of the number of occupational therapy sessions provided for one month in Spring 1985. The handicapping condition "OTHER" refers to individuals with eligibility certification categories "other health impaired," "other health impaired--autism," and "speech impaired," and OT individuals who at the time were non-certified.

Of the 28 report summaries, 18 were submitted by Registered Occupational Therapists (OTRs), and 10 were submitted by Certified Occupational Therapist Assistants (COTAs). One of the COTAs submitted information for two report summaries. Thus OT services reported by 18 therapists and 9 COTAs were analyzed.

Table 24

Number of Occupational Therapy Summary Reports, by District

District	No. of Summary Reports	Percent
Honolulu	6	21.4
Central	5	17.9
Leeward	5	17.9
Windward	7	25.0
Hawaii	3	10.7
Maui	1	3.6
Kauai	1	3.6
TOTAL	**28**	**100.0**

Table 25

Descriptive Analysis of Estimated Monthly Occupational Therapy Services

	No. and % of Monthly Summary Reports Used in Calculation (Total=28)	Per Summary Report				TOTAL
		RANGE		AVERAGE		
		MIN	MAX	MEAN	MEDIAN	
No. of Students Assigned**	28 (100%)	19	65	39.1	38.0	1096
No. of Students Served	28 (100%)	14	62	37.1	38.0	1038
% of Assigned Students Served						94.7%
No. of Referrals	18 (64.3%)	0	12	4.4	4.5	80
No. of New Students Evaluated	16 (57.1%)	0	13	3.1	2.5	50
No. Recommended Service	15 (53.6%)	0	3	1.4	1.0	21
% Recommended Service						42.0%
No. of Referred Re-Evaluations	14 (50.0%)	0	8	2.2	1.5	31
No. Recommended Service	14 (50.0%)	0	5	1.6	1.0	23
% Recommended Service						74.2%
No. of Non-Referred Re-Evaluations	10 (35.7%)	0	6	2.0	1.5	20
No. Recommended Service	8 (28.6%)			1.9	1.5	15
% Recommended Service						75.0%
No. of Teacher Consultations	19 (68.0%)	0	21	6.0	5.0	113
No. of Schools Serviced	23 (82.0%)	3	11	7.1	7.0	163

Note. Based on Spring (March, April, May) 1985 Monthly Statistical Logs.

One therapist submitted two Summary Report Sheets (for each district served).

Table 26

Number of Monthly Occupational Therapy Sessions Provided, by Handicapping Condition (Statewide Totals).

HANDICAPPING CONDITION	ELIGIBILITY CERT. CODE	No. and % of Monthly Summary Reports Used in Calculation (Total=28)	No. of Sessions per Summary Report				TOTAL	
			RANGE		AVERAGE		No. of OT Sessions	Percent (%)
			MIN	MAX	MEAN	MEDIAN		
MIMR	01	21 (75%)	1	55	14.8	12.0	311	11.6
MOMR	02	18 (64%)	1	25	10.3	9.0	186	6.9
SMR/PMR	03,04	10 (36%)	2	12	4.7	3.5	47	1.8
LD	05	25 (89%)	6	120	48.3	45.0	1207	44.9
EH	06	11 (39%)	0	19	5.8	4.0	64	2.4
VI/BL	07,08	5 (18%)	0	34	8.6	3.0	43	1.6
HI/DF	09,10	7 (25%)	0	9	3.6	3.0	25	.9
OH	11A	16 (57%)	1	20	6.4	5.0	103	3.8
DB	13	4 (14%)	0	16	5.3	2.5	21	.8
SMH	14	12 (43%)	4	61	23.8	20.0	286	10.7
LI	15	21 (75%)	1	38	9.2	7.0	193	7.2
OTHER	11B,11C,12 NON-CERTIFIED	21 (75%)	0	26	9.5	8.0	200	7.5
TOTAL							**2686**	**100.0**

Note. Based on Spring 1985 Monthly Summary Reports.

Daily Record of Therapy Services (Monthly Statistical Logs)

The distribution of students eligible for occupational therapy as a special education related service, by district, is shown in Figure 9. The largest portion of students were enrolled in Honolulu district schools (23%). The second and third largest percentages of students eligible for OT were enrolled in Windward district (20%) and Central district (19%) respectively. A conservative estimate of treatment only caseload (i.e., individual, group or consultative therapy services) provided by OTRs and COTAs was computed at 40.6 students per therapist or assistant. The estimate did not include diagnostic evaluations, re-evaluations, meetings or data collection responsibilities, and assumed equal distribution of treatment services among all 18 therapists and 9 assistants.

Table 27 shows the number and percent of students attending Hawaii public schools (excluding orthopedic units) who were eligible, in Spring 1985, to receive occupational therapy as a special education related service, by handicapping condition.

Table 28 contains summary statistics on OT services provided as special education related service to students enrolled in Hawaii public schools. Available data include (a) the number and duration (length) of evaluation sessions conducted, (b) the type, number, and duration of direct services provided, (c) the number and duration of indirect services (consultations) provided, and (d) the number of student absences reported. Information was also available on the number and duration of other services provided, viz., meetings and data collection activities.

Table 29 provides summary information on the type and number of OT services, by number of sessions and number of students, per handicapping condition. Data on the number of sessions conducted based on the number of students served (for which complete data were available) are presented for each type of occupational therapy service (diagnostic evaluation, direct, and indirect therapy). Similarly, Table 30 provides summary information on the type and number of OT services, by total duration of sessions (in hours and minutes) and number of students, per handicapping condition. The data on duration are based on the number of students served (for which complete data were available) and are presented for diagnostic evaluations, and direct and indirect therapy services.

Figure 10 portrays graphically, the relative number of evaluations conducted, by handicapping condition. Information on the total duration of evaluation sessions, by handicapping condition, is depicted in Figure 11. Similarly, Figure 12 is a pictorial presentation of the type and number of group OT services provided, by handicapping condition. Figure 13 presents the total duration and percent of group OT services, by type of group OT service (small or large) and by handicapping condition.

Figure 14 is a graphic portrayal of the number of monthly individual OT sessions, and number of students served, by handicapping condition. Figure 15 shows the duration and percent of the monthly individual occupational therapy sessions, by handicapping condition.

Figure 16 presents the number of monthly OT consultations, and number of students served, by handicapping condition. Finally, Figure 17 shows

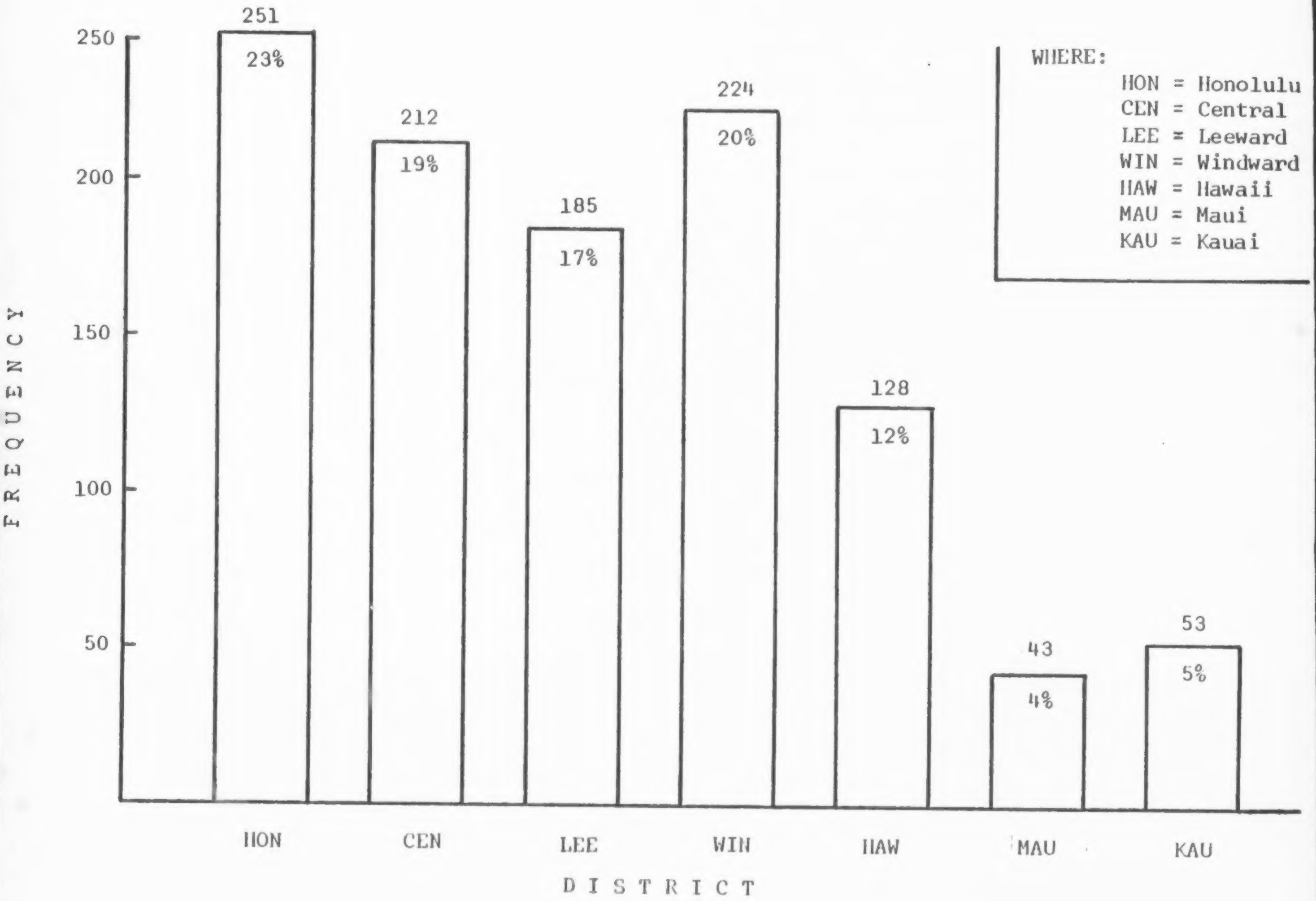

Figure 9. Number and percent of total students eligible for occupational therapy as a special education related service, by district.

Table 27

Number and Percent of Students Eligible to Receive Occupational Therapy as a Special Education Related Service, by Handicapping Condition

Handicapping Condition	Eligibility Certification Code	Number of Students	Percent
MIMR	01	103	9.4
MOMR	02	80	7.3
SMR/PMR	03,04	30	2.7
LD	05	422	38.5
EH	06	24	2.2
VI/BL	07,08	9	0.8
HI/DF	09,10	4	0.4
OH	11A	62	5.7
DB	13	4	0.4
SMH	14	163	14.9
LI	15	74	6.8
OTHER	11B,11C,12, non-certified	100	9.1
Information not available		21	1.9
TOTAL		**1096**	**100.0**

Table 28

Estimated Type, Frequency and Duration of Monthly Occupational Therapy (OT) Provided as a Special Education Related Service.

	No. of Eligible Students	No. of Cases w/Missing Data	No. of Cases Used in Computation	Per Student Range Min.	Per Student Range Max.	Per Student Average Mean	Per Student Average Median	TOTAL No. of Sessions	TOTAL Duration (Hours:Minutes)
OT Services									
Evaluations									
Sessions	104	12	92	1	5	1.6	1	148	
Duration (Hours:Minutes)	104	12	92	0:15	3:15	1:15	1:15		115:45
Treatment									
Direct OT services									
Individual									
Sessions	689	18	671	1	16	3.0	3	2014	
Duration (Hours:Minutes)	689	18	671	0:15	7:45	1:27	1:15		970:30
Group, small (2-4)									
Sessions	223	2	221	1	9	3.3	3	720	
Duration (Hours:Minutes)	223	4	219	0:15	4:30	1:39	1:30		362:30
Group, large (5+)									
Sessions	73	1	72	1	3	1.9	2	135	
Duration (Hours:Minutes)	73	1	72	0:30	3:15	1:18	1:00		93:45
Indirect OT services (consultations)									
Sessions	170	16	154	1	5	1.5	1	235	
Duration (Hours:Minutes)	170	16	154	0:15	4:45	0:49	0:30		125:45
TOTAL Treatment									
Sessions			1118	1	16			3104	
Durations (Hours:Minutes)			1116	0:15	7:45				1552:30
TOTAL OT services									
Sessions			1210	1	16			3252	
Durations (Hours:Minutes)			1208	0:15	7:45				1668:15
Absences									
Student			330	1	7	1.5	1	501	
Other Services									
Meetings									
Sessions	113	8	105	1	3	1.1	1	114	
Duration (Hours:Minutes)	113	15	98	0:15	2:00	0:53	0:45		86:00
Data Collection									
Sessions	162	10	152	1	8	1.9	1	295	
Duration (Hours:Minutes)	162	11	151	0:15	3:45	0:52	0:30		131:45

Table 29

Type and Number of Occupational Therapy Services, (OT) by Number of Sessions and Number of Students Served per Handicapping Condition (HC).

	HANDICAPPING CONDITION													
	MIMR	MOMR	SMR/ PMR	LD	EH	VI/ BL	HI/ DF	OH	DB	SMH	LI	OTHER	HC CODE UNAVAIL.	TOTAL
EVALUATIONS														
No. of sessions (row %)	9 (6.1)	7 (4.7)	5 (3.4)	38 (25.7)	2 (1.4)	0 (0.0)	1 (0.7)	9 (6.1)	0 (0.0)	18 (12.2)	19 (12.8)	35 (23.6)	5 (3.4)	148 (100.0)
No. of students w/ complete data (row %)	5 (5.4)	5 (5.4)	3 (3.3)	26 (28.3)	1 (1.1)	0 (0.0)	1 (1.1)	7 (7.6)	0 (0.0)	12 (13.0)	10 (10.9)	17 (18.5)	5 (5.4)	92 (100.0)
No. of students w/ incomplete data (row %)	0 (0.0)	1 (8.3)	0 (0.0)	6 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (16.7)	2 (16.7)	1 (8.3)	0 (0.0)	12 (100.0)
Total no. of students (row %)	5 (4.8)	6 (5.8)	3 (2.9)	32 (30.8)	1 (1.0)	0 (0.0)	1 (1.0)	7 (6.7)	0 (0.0)	14 (13.5)	12 (11.5)	18 (17.3)	5 (4.8)	104 (100.0)
DIRECT OT SERVICES														
INDIVIDUAL														
No. of sessions (row %)	194 (9.6)	149 (7.4)	21 (1.0)	825 (41.0)	84 (4.2)	29 (1.4)	8 (0.4)	118 (5.9)	14 (0.7)	273 (13.6)	126 (6.3)	168 (8.3)	5 (0.2)	2014 (100.0)
No. of students w/ complete data (row %)	65 (9.7)	47 (7.0)	13 (1.9)	272 (40.5)	17 (2.5)	8 (1.2)	3 (0.4)	41 (6.1)	4 (0.6)	99 (14.6)	43 (6.4)	56 (8.3)	3 (0.4)	671 (100.0)
No. of students w/ incomplete data (row %)	1 (5.6)	2 (11.1)	0 (0.0)	3 (16.7)	1 (5.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (27.8)	5 (27.8)	1 (5.6)	0 (0.0)	18 (100.0)
Total no. of students (row %)	66 (9.6)	49 (7.1)	13 (1.9)	275 (39.9)	18 (2.6)	8 (1.2)	3 (0.4)	41 (6.0)	4 (0.6)	104 (15.1)	48 (7.0)	57 (8.3)	3 (0.4)	689 (100.0)
GROUP, small (2-4)														
No. of sessions (row %)	94 (13.1)	52 (7.2)	18 (2.5)	449 (62.4)	3 (0.4)	6 (0.8)	0 (0.0)	28 (3.9)	0 (0.0)	14 (1.9)	28 (3.9)	25 (3.5)	3 (0.4)	720 (100.0)
No. of students w/ complete data (row %)	30 (13.6)	24 (10.9)	11 (5.0)	116 (52.5)	3 (1.4)	2 (0.9)	0 (0.0)	9 (4.1)	0 (0.0)	5 (2.3)	11 (5.0)	9 (4.1)	1 (0.5)	221 (100.0)
No. of students w/ incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)
Total no. of students (row %)	30 (13.5)	24 (10.8)	11 (4.9)	116 (52.0)	3 (1.3)	2 (0.9)	0 (0.0)	9 (4.0)	0 (0.0)	7 (3.1)	11 (4.9)	9 (4.0)	1 (0.4)	223 (100.0)
GROUP, large (5+)														
No. of sessions (row %)	14 (10.4)	8 (5.9)	7 (5.2)	68 (50.4)	2 (1.5)	0 (0.0)	0 (0.0)	2 (1.5)	0 (0.0)	15 (11.1)	10 (7.4)	6 (4.4)	3 (2.2)	135 (100.0)
No. of students w/ complete data (row %)	7 (9.7)	8 (11.1)	4 (5.6)	31 (43.1)	1 (1.4)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)	12 (16.7)	5 (6.9)	2 (2.8)	1 (1.4)	72 (100.0)
No. of students w/ incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)
Total no. of students (row %)	7 (9.6)	8 (11.0)	4 (5.5)	31 (42.5)	1 (1.4)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)	13 (17.8)	5 (6.8)	2 (2.7)	1 (1.4)	73 (100.0)
INDIRECT OT SERVICES (Consultation)														
No. of sessions (row %)	24 (10.2)	21 (8.9)	10 (4.3)	31 (13.2)	5 (2.1)	20 (8.5)	3 (1.3)	21 (8.9)	10 (4.3)	48 (20.4)	12 (5.1)	17 (7.2)	10 (4.3)	235 (100.0)
No. of students w/ complete data (row %)	15 (9.7)	14 (9.1)	8 (5.2)	26 (16.9)	3 (1.9)	7 (4.5)	2 (1.3)	13 (8.4)	4 (2.6)	31 (20.1)	9 (5.8)	15 (9.7)	7 (4.5)	154 (100.0)
No. of students w/ incomplete data (row %)	1 (6.3)	1 (6.3)	0 (0.0)	1 (6.3)	1 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (25.0)	4 (25.0)	4 (25.0)	0 (0.0)	16 (100.0)
Total no. of students (row %)	16 (9.4)	15 (8.8)	8 (4.7)	27 (15.9)	4 (2.4)	7 (4.1)	2 (1.2)	13 (7.6)	4 (2.4)	35 (20.6)	13 (7.6)	19 (11.2)	7 (4.1)	170 (100.0)
TOTAL OT SERVICES														
No. of sessions (row %)	335 (10.3)	237 (7.3)	61 (1.9)	1411 (43.4)	96 (3.0)	55 (1.7)	12 (0.4)	178 (5.5)	24 (0.7)	368 (11.3)	195 (6.0)	251 (7.7)	26 (0.8)	3249 (100.0)
No. of students w/ complete data (row %)	122 (10.1)	98 (8.1)	39 (3.2)	471 (38.9)	25 (2.1)	17 (1.4)	6 (0.5)	71 (5.9)	8 (0.7)	159 (13.1)	78 (6.4)	99 (8.2)	17 (1.4)	1210 (100.0)
No. of students w/ incomplete data (row %)	2 (4.1)	4 (8.2)	0 (0.0)	10 (20.4)	2 (4.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	14 (28.6)	11 (22.4)	6 (12.2)	0 (0.0)	49 (100.0)
Total no. of students* (row %)	124 (9.8)	102 (8.1)	39 (3.1)	481 (38.2)	27 (2.1)	17 (1.4)	6 (0.5)	71 (5.6)	8 (0.6)	173 (13.7)	89 (7.1)	105 (8.3)	17 (1.4)	1259 (100.0)

Note. Total OT Services contain duplicated count of students across type of occupational therapy service.

Table 30

Type and Number of Occupational Therapy Services, by Duration (In Hours:Minutes) and Number of Students Served per Handicapping Condition (HC).

	HANDICAPPING CONDITION													
	MIMR	MOMR	SMR/ PMR	LD	EH	VI/ BL	HI/ DF	OH	DB	SMH	LI	OTHER	HC CODE UNAVAIL.	TOTAL
EVALUATIONS														
Duration (hours:minutes)	(7:00)	(5:45)	(4:45)	(31:15)	(1:30)	(0:00)	(0:30)	(5:45)	(0:00)	(14:00)	(14:00)	(22:00)	(9:15)	(115:45)
(row %)	(6.0)	(5.0)	(4.1)	(27.0)	(1.3)	(0.0)	(0.4)	(5.0)	(0.0)	(12.1)	(12.1)	(19.0)	(8.4)	(100.0)
No. of students w/ complete data (row %)	5 (5.4)	5 (5.4)	3 (3.3)	26 (28.3)	1 (1.1)	0 (0.0)	1 (1.1)	7 (7.6)	0 (0.0)	12 (13.0)	10 (10.9)	17 (18.5)	5 (5.4)	92 (100.0)
No. of students w/ incomplete data (row %)	0 (0.0)	1 (8.3)	0 (0.0)	6 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (16.7)	2 (16.7)	1 (8.3)	0 (0.0)	12 (100.0)
Total no. of students (row %)	5 (4.8)	6 (5.8)	3 (2.9)	32 (30.8)	1 (1.0)	0 (0.0)	1 (1.0)	7 (6.7)	0 (0.0)	14 (13.5)	12 (11.5)	18 (17.3)	5 (4.8)	104 (100.0)
DIRECT OT SERVICES														
INDIVIDUAL														
Duration (hours:minutes)	(94:45)	(66:30)	(10:45)	(402:00)	(36:45)	(13:15)	(2:45)	(60:15)	(6:30)	(136:15)	(60:30)	(79:00)	(2:15)	(971:30)
(row %)	(9.8)	(6.8)	(1.1)	(41.4)	(3.8)	(1.4)	(0.3)	(6.2)	(0.7)	(14.0)	(6.2)	(8.1)	(0.2)	(100.0)
No. of students w/ complete data (row %)	65 (9.7)	47 (7.0)	13 (1.9)	272 (40.5)	17 (2.5)	8 (1.2)	3 (0.4)	41 (6.1)	4 (0.6)	99 (14.8)	43 (6.4)	56 (8.3)	3 (0.4)	671 (100.0)
No. of students w/ incomplete data (row %)	1 (5.5)	2 (11.1)	0 (0.0)	3 (16.7)	1 (5.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (27.8)	5 (27.8)	1 (5.5)	0 (0.0)	18 (100.0)
Total no. of students (row %)	66 (9.6)	49 (7.1)	13 (1.9)	275 (39.9)	18 (2.6)	8 (1.2)	3 (0.4)	41 (6.0)	4 (0.6)	104 (15.1)	48 (7.0)	57 (8.3)	3 (0.4)	689 (100.0)
GROUP, small (2-4)														
Duration (hours:minutes)	(47:00)	(28:15)	(10:00)	(222:00)	(1:30)	(3:00)	(0:00)	(10:00)	(0:00)	(8:15)	(14:15)	(12:45)	(1:30)	(358:30)
(row %)	(13.1)	(7.9)	(2.8)	(62.0)	(0.4)	(0.8)	(0.0)	(2.8)	(0.0)	(2.3)	(4.0)	(3.6)	(0.4)	(100.0)
No. of students with complete data (row %)	30 (13.7)	24 (11.0)	11 (5.0)	114 (52.1)	3 (1.4)	2 (0.9)	0 (0.0)	9 (4.1)	0 (0.0)	5 (2.3)	11 (5.0)	9 (4.1)	1 (0.5)	219 (100.0)
No. of students w/ incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	2 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (100.0)
Total no. of students (row %)	30 (13.5)	24 (10.8)	11 (4.9)	116 (52.0)	3 (1.3)	2 (0.9)	0 (0.0)	9 (4.0)	0 (0.0)	7 (3.1)	11 (4.9)	9 (4.0)	1 (0.4)	223 (100.0)
GROUP, large (5+)														
Duration (hours:minutes)	(10:30)	(5:00)	(2:45)	(46:00)	(0:45)	(0:00)	(0:00)	(2:00)	(0:00)	(12:45)	(6:00)	(6:30)	(1:30)	(93:45)
(row %)	(11.2)	(5.3)	(2.9)	(49.1)	(0.8)	(0.0)	(0.0)	(2.1)	(0.0)	(13.6)	(6.4)	(6.9)	(1.6)	(100.0)
No. of students w/ complete data (row %)	7 (9.7)	8 (11.1)	4 (5.6)	31 (43.1)	1 (1.4)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)	12 (16.7)	5 (6.9)	2 (2.8)	1 (1.4)	72 (100.0)
No. of students w/ incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)
Total no. of students (row %)	7 (9.6)	8 (11.0)	4 (5.5)	31 (42.5)	1 (1.4)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)	13 (17.8)	5 (6.8)	2 (2.7)	1 (1.4)	73 (100.0)
INDIRECT OT SERVICES (Consultation)														
Duration (hours:minutes)	(11:30)	(9:45)	(5:00)	(13:15)	(1:15)	(10:15)	(1:45)	(13:45)	(3:45)	(31:00)	(4:45)	(14:15)	(5:30)	(125:45)
(row %)	(9.1)	(7.8)	(4.0)	(10.5)	(1.0)	(8.2)	(1.4)	(10.9)	(3.0)	(24.7)	(3.8)	(11.3)	(4.4)	(100.0)
No. of students w/ complete data (row %)	15 (9.7)	14 (9.1)	8 (5.2)	26 (16.9)	3 (1.9)	7 (4.5)	2 (1.3)	13 (8.4)	4 (2.6)	31 (20.1)	9 (5.8)	15 (9.7)	7 (4.5)	154 (100.0)
No. of students w/ incomplete data (row %)	1 (6.3)	1 (6.3)	0 (0.0)	1 (6.3)	1 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (25.0)	4 (25.0)	4 (25.0)	0 (0.0)	16 (100.0)
Total no. of students (row %)	16 (9.4)	15 (8.8)	8 (4.7)	27 (15.9)	4 (2.4)	7 (4.1)	2 (1.2)	13 (7.6)	4 (2.4)	35 (20.6)	13 (7.6)	19 (11.2)	7 (4.1)	170 (100.0)
TOTAL OT SERVICES														
Duration (hours:minutes)	(170:45)	(115.15)	(33:15)	(714:30)	(41:45)	(26:30)	(5:00)	(91:45)	(10:15)	(202:15)	(99:30)	(134:30)	(20:00)	(1665:15)
(row %)	(10.3)	(6.9)	(2.0)	(42.9)	(2.5)	(1.6)	(0.3)	(5.5)	(0.6)	(12.1)	(6.0)	(8.1)	(1.2)	(100.0)
No. of students w/ complete data (row %)	122 (10.1)	98 (8.1)	39 (3.2)	469 (38.8)	25 (2.1)	17 (1.4)	6 (0.5)	71 (5.9)	8 (0.7)	159 (13.1)	78 (6.5)	99 (8.2)	17 (1.4)	1208 (100.0)
No. of students w/ incomplete data (row %)	2 (3.9)	4 (7.8)	0 (0.0)	12 (23.5)	2 (3.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	14 (27.5)	11 (21.6)	6 (11.8)	0 (0.0)	51 (100.0)
Total no. of students (row %)	124 (9.8)	102 (8.1)	39 (3.1)	481 (38.2)	27 (2.1)	17 (1.4)	6 (0.5)	71 (5.6)	8 (0.6)	173 (13.7)	89 (7.1)	105 (8.3)	17 (1.4)	1259 (100.0)

Note. Total OT services contain duplicated count of students across type of occupational therapy service

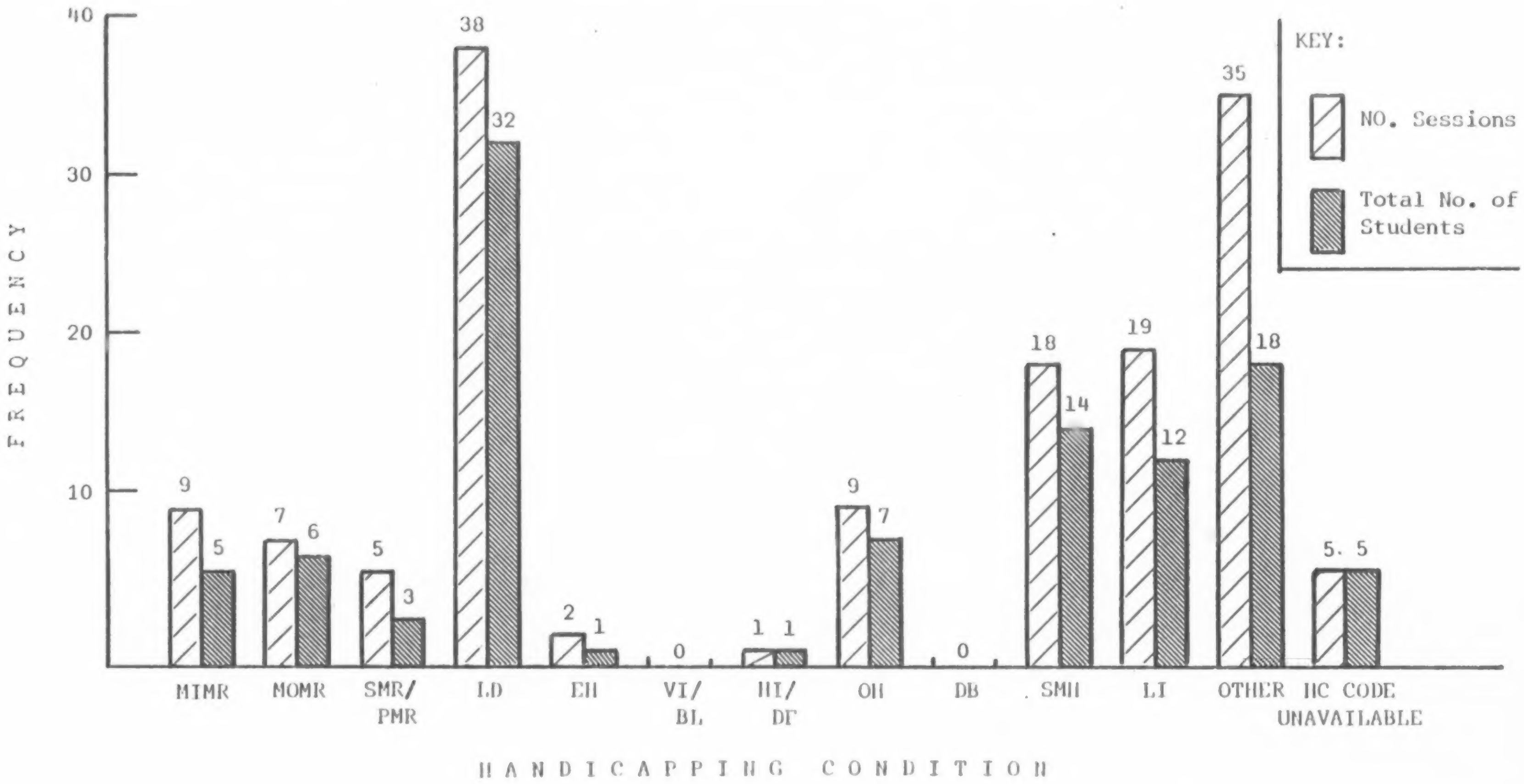

Figure 10. Number and percent of monthly diagnostic evaluations conducted for occupational therapy, by number of students and number ot sessions per handicapping condition (HC).

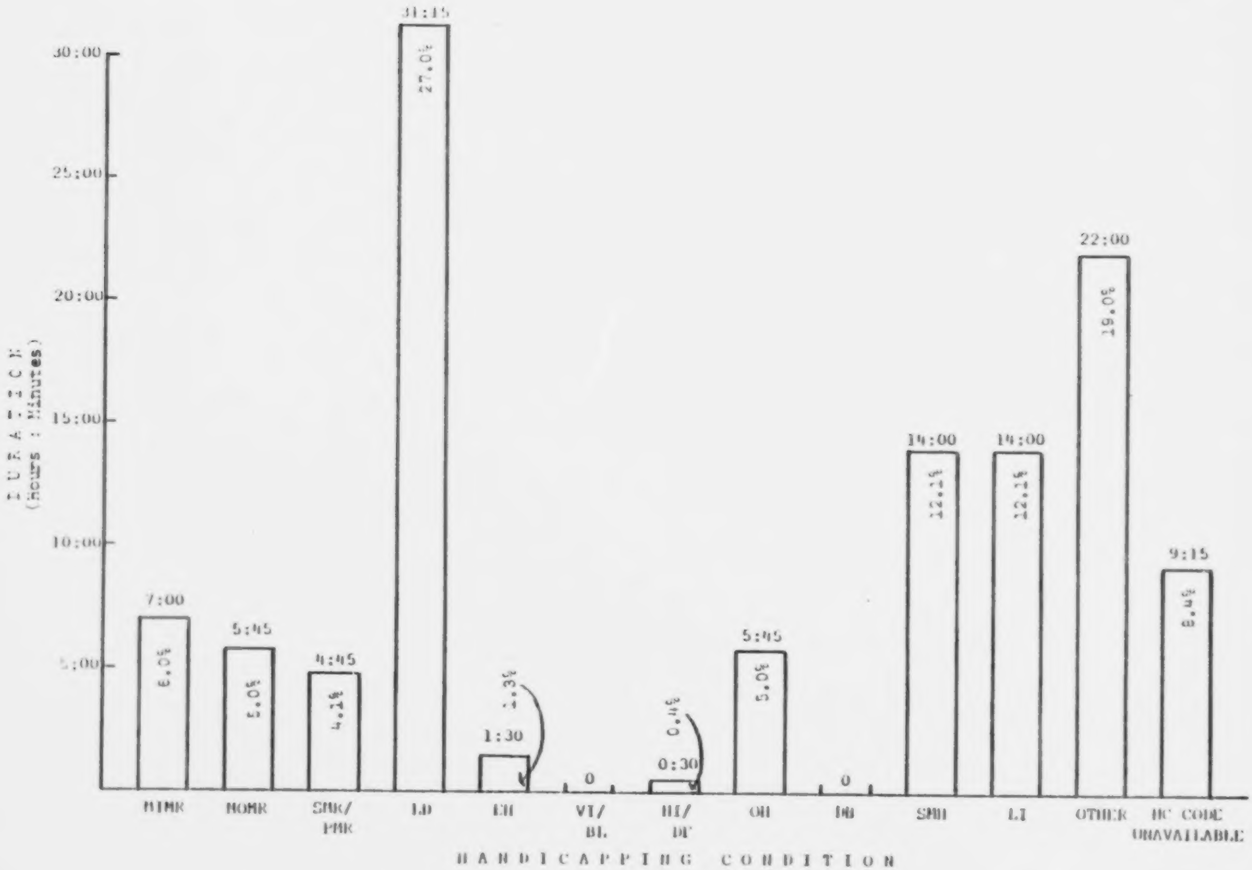

Figure 11. Duration and percent of monthly occupational therapy diagnostic evaluation sessions, by handicapping condition (HC).

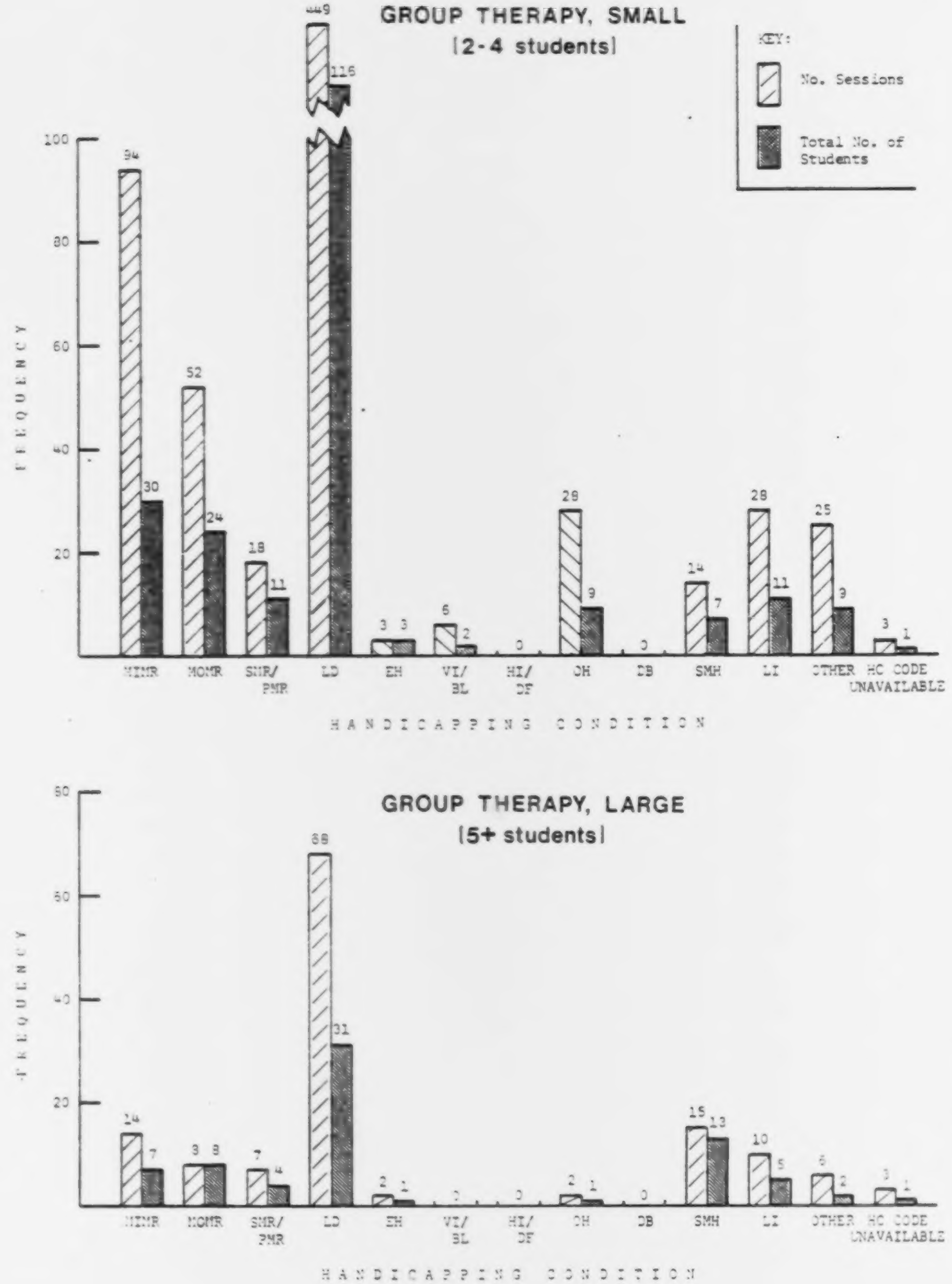

Figure 12. Type and number of monthly group (small and large) occupational therapy sessions, and number of students served, by handicapping condition (HC).

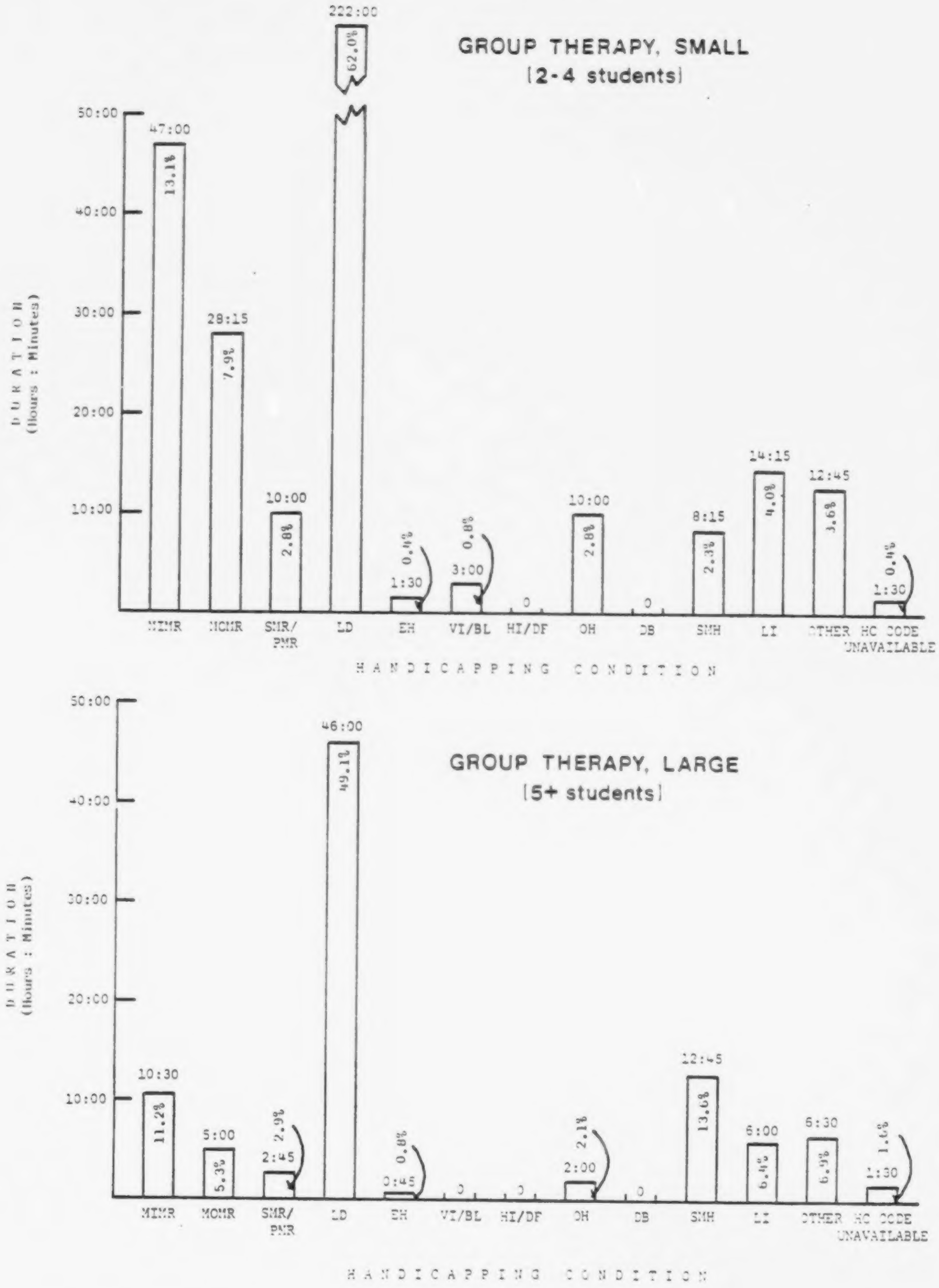

Figure 13. Duration and percent of monthly occupational therapy group (small and large) sessions, by handicapping condition (HC).

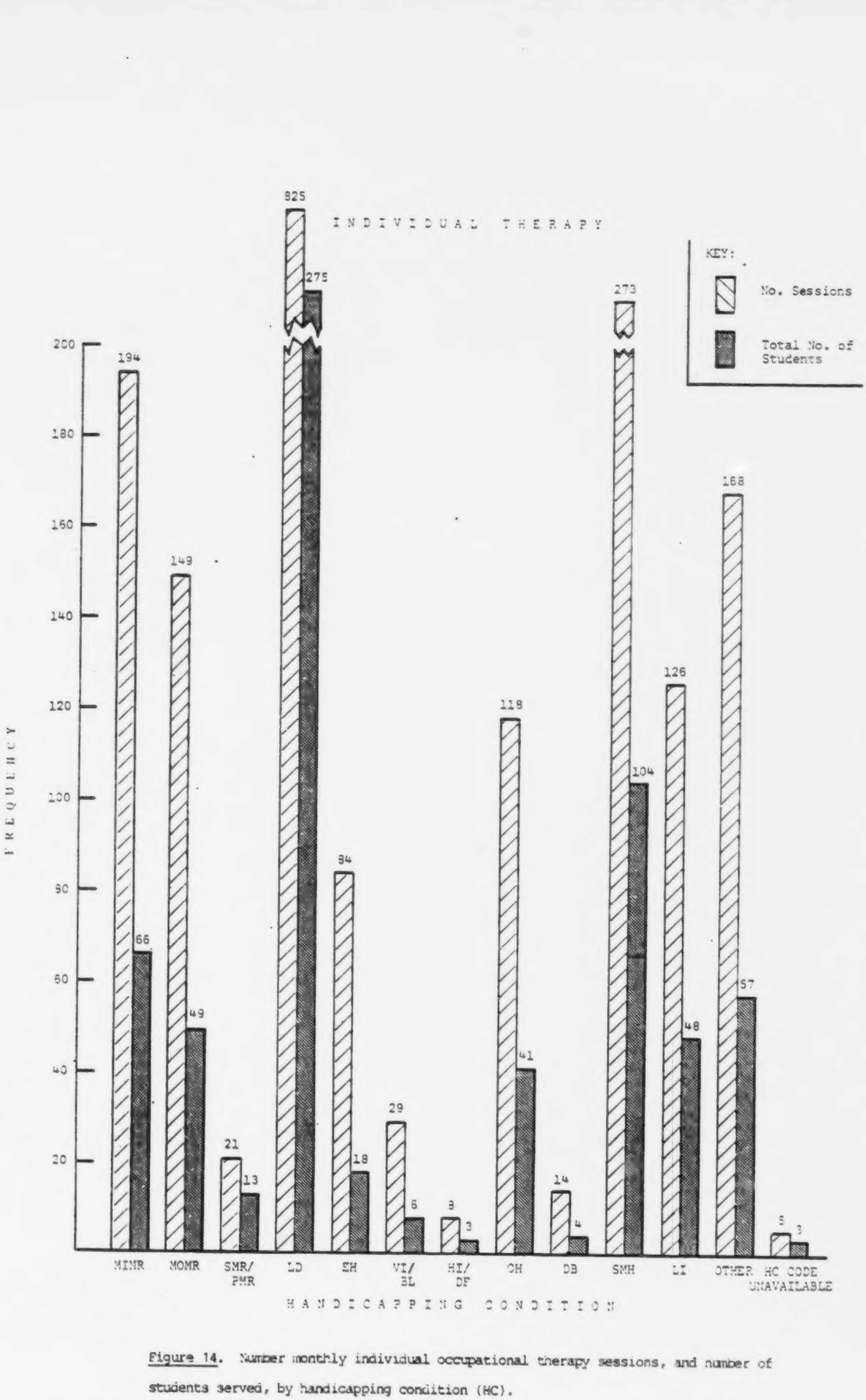

Figure 14. Number monthly individual occupational therapy sessions, and number of students served, by handicapping condition (HC).

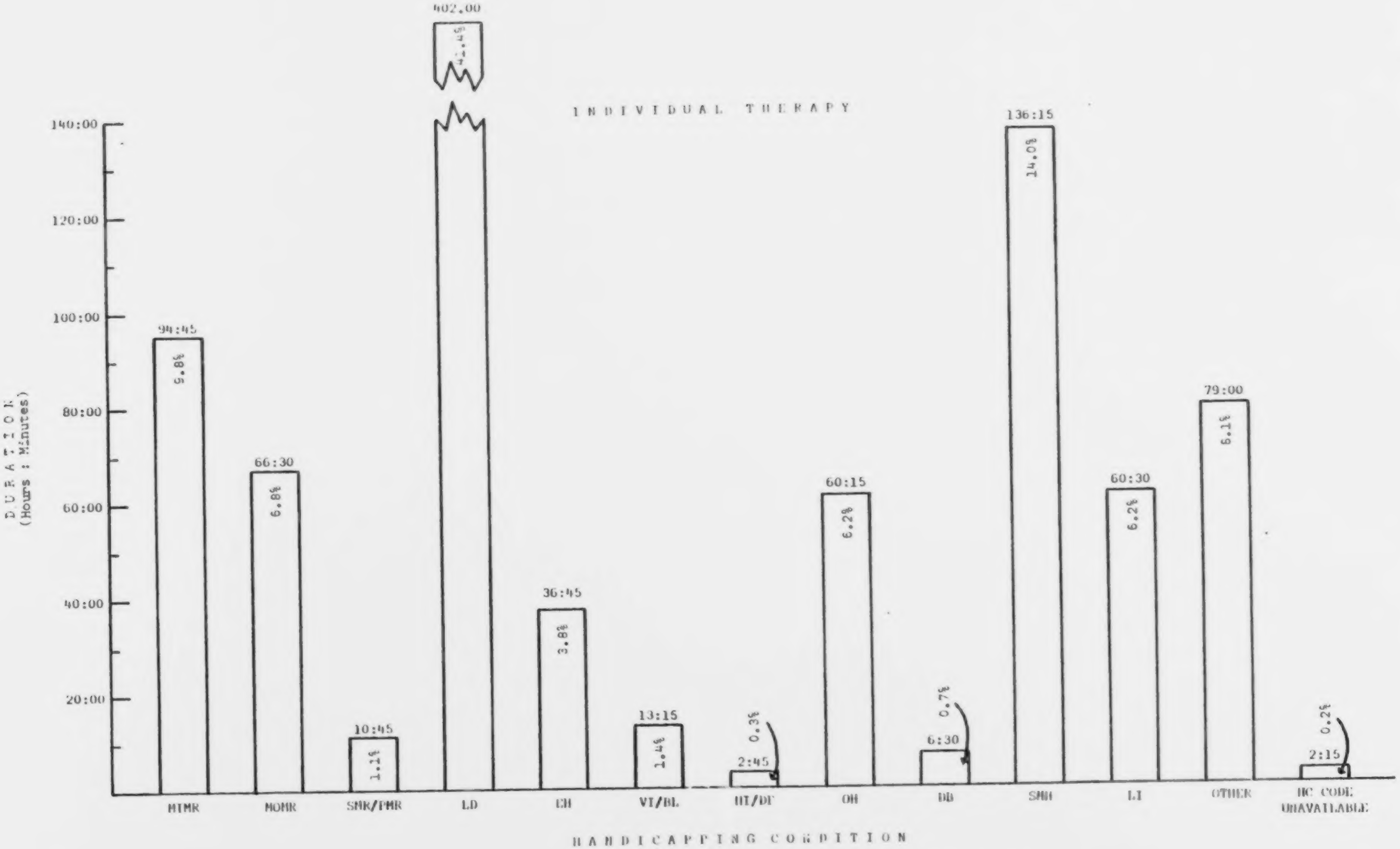

Figure 15. Duration and percent of monthly individual occupational therapy sessions, by handicapping condition (HC).

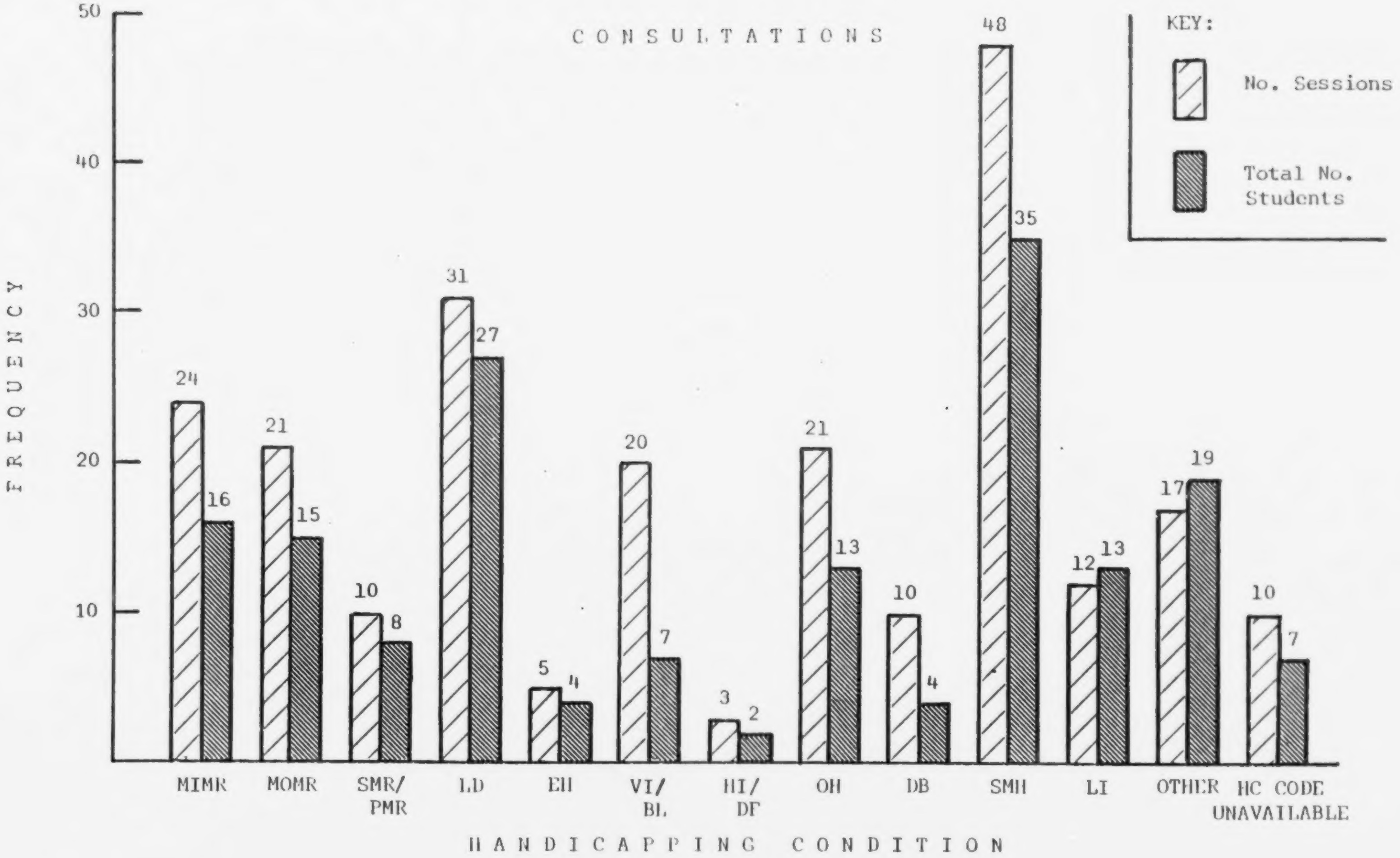

Figure 16. Number of monthly occupational therapy consultations, and number of students served, by handicapping condition (HC).

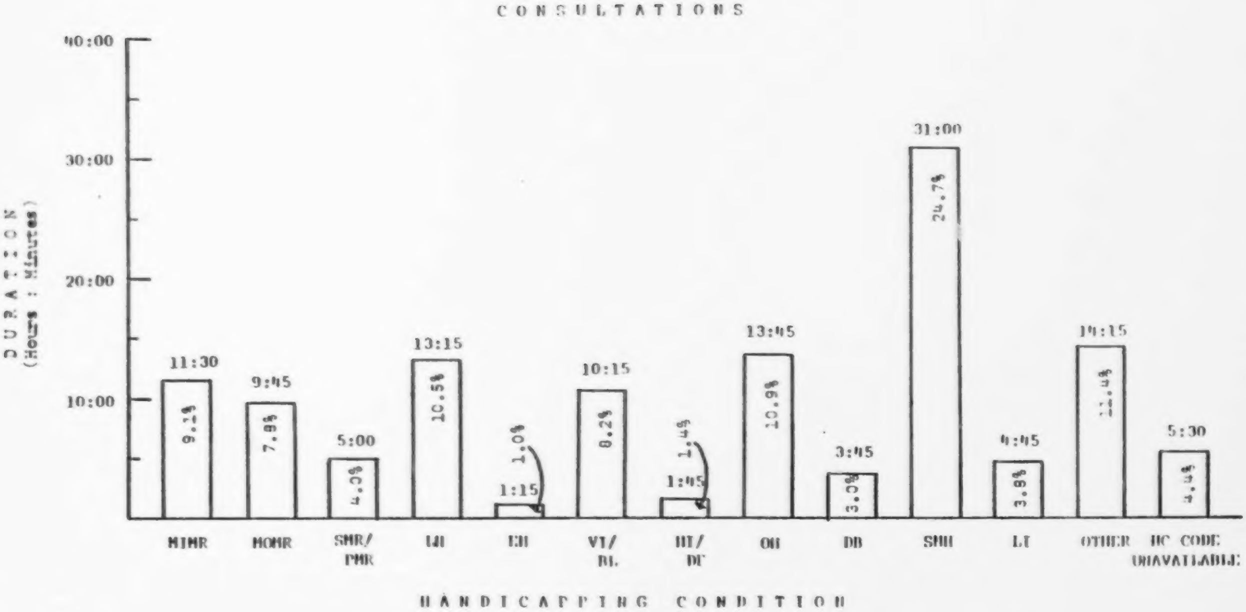

Figure 17. Duration and percent of monthly occupational therapy consultations, by handicapping condition (HC).

the duration and percent of monthly OT consultations, by handicapping condition.

DISCUSSION

The result of the study is a statewide "snap-shot" of OT services to 1096 eligible handicapped students, excluding students enrolled in orthopedic units in two separate districts. The estimates derived from the Spring 1985 data were conservative approximations of the amount of OT services delivered.

Aside from the unavailability of information from two orthopedic units, another factor contributed to the conservative nature of the estimations. Data missing within the report summaries or the daily record of therapy services (statistical logs) tended to attenuate the total number of sessions and time required to provide OT services. Occasionally information was not reported for variables such as handicapping condition, or when blanks were encountered in the report summaries or statistical logs, it was not readily apparent whether blanks indicated missing data or zeros. OT supervisory personnel were subsequently apprised of the difficulties encountered in the interpretation of the reported data, and were provided recommendations on improving the reporting procedure.

Report Summaries

The bulk of the reports were submitted from districts on Oahu (82.2%). Windward district personnel submitted the largest number of report summaries (n=7, 25.0%). A statewide total of 80 referrals was recorded, with an average (mean) of 4.4 referrals per therapist based on the 18 monthly report summaries that provided data on referrals. The range in the number of referrals per therapist was quite wide (from 0 to 12). Occupational therapists and assistants were assigned a total of 1096 students, and provided service to 1038 students (94.7%). Thus, within the month data were analyzed, almost 95% of the eligible OT students received OT services. In contrast, a similar study on physical therapy services revealed that over one fourth of the 664 eligible physical therapy students were not served for the month of May 1985 (Hirata, McClelland, Andre, Wada & Tosaki, 1986b).

OT personnel conducted evaluations on 50 new students, of whom 21 (42%) were recommended for OT services which seems to suggest a relatively low "hit rate" in identifying students in need of OT. Similar analysis using physical therapy data revealed that 77.4% of new student evaluations culminated in a recommendation for physical therapy. It is not immediately clear what accounts for the difference in the two types of related service. One reason may be that OT deals primarily with problems associated with fine motor coordination, and such problems are not as obvious as problems associated with gross motor activity. Another reason may be that OT referrals are relatively conservative. Still another contributing factor may be the inability of OT personnel to keep up with the high caseload levels (mean caseload > 40 students per occupational therapist or assistant). Consequently, recommendations for service may be reserved for those who are most seriously impaired or for those who hold the greatest potential for recovery or progress.

Re-evaluations were conducted on 31 referred students, of whom 23 (74.2%) were recommended for further OT. Similarly, 15 of the 20 non-referred re-evaluations (75%) received recommendations for further OT.

The largest number of occupational therapy sessions were provided to the learning disabled (1207 of 2686 sessions; 44.9%). The second and third largest number of sessions were provided to the mildly mentally retarded and the severely multiply handicapped (311 of 2686 sessions, 11.6%; and 286 of 2686 sessions, 10.7%, respectively). Also, learning disabled students were serviced by the largest number of therapists or assistants. Twenty-five therapist and therapy assistants reported carrying learning disabled students on their caseloads. In general, there was a wide range in the number of OT sessions reported for the various handicapping conditions. Finally, slight differences between the two measures of central tendency, the mean and the median, were noted when comparisons of averages were made across handicapping conditions. Where a few extreme scores were encountered in a distribution, the median may be the more appropriate measure of the two.

Daily Record of Therapy Sessions

A conservative estimate of occupational therapy caseload was computed at slightly over 40 students per therapist or therapy assistant. The estimate is quite conservative due to (a) the exclusion of additional orthopedic unit students that, in Spring 1985, were monitored by the Department of Health, Crippled Children Services Branch, (b) missing data, and (c) the exclusion of diagnostic evaluations, re-evaluations, meetings and other services (e.g., data collection).

The largest number of students eligible for OT as a related service were from Honolulu district schools (251 of 1096 students; 23%). Learning disabled (LD) students comprised the largest contingent; a total of 422 LD students (38.5%) were certified eligible. The 422 LD students constitute approximately 5.6% of the total public school LD population. Occupational therapy personnel conducted at least 148 diagnostic evaluations and re-evaluations on 92 students. Incomplete data were reported in reference to an additional 12 students who were evaluated. Thus, a total of 104 students received diagnostic evaluation or re-evaluation services. The average length of each assessment session was 1 hour and 15 minutes, with a range per session from 15 minutes to 3 hours and 15 minutes.

Individual therapy was provided to 689 students. The results reveal a monthly average of 3 individual therapy sessions per student. The average duration of individaul sessions was 87 minutes, and ranged from a low of 15 minutes to a high of 7 hours and 45 minutes. Over 270 LD students received the largest portion of individual therapy sessions. These LD students received 41% of the total number of individual therapy sessions given. The mean duration of individual sessions provided to LD students was 29 minutes.

Group therapy was provided in two forms: small (i.e., 2-4 students per group), and large (5 or more students per group). The 221 students for whom small group therapy data was available received an average of 3.6 sessions and a total of 720 sessions (mean duration = 100 minutes). The most frequent consumers of small group therapy were LD students (n=116) who accounted for 449 (62.4%) of the 720 small group sessions. Learning disabled students typically received approximately 30 minutes of small group therapy per session (cf. mean duration of 1 hour and 40 minutes for total small group sessions). The mean number of large group sessions received by 72 students in 1 month was just under 2 sessions. A total of 135 large group sessions, with an average duration of 78 minutes, was recorded. As in individual therapy and in small group therapy, LD students received the largest number of large group sessions (68 of 135; 58.4%). The average large group therapy session for LD students was almost 41 minutes.

Consultation was also used as a service option. A total of 235 consultation sessions were provided to 154 students resulting in a mean of approximately 1.5 sessions per student and a mean duration per session of 49 minutes. OT personnel utilized consultation most often with severely multiply handicapped (SMH) students (a total of 35 SMH students). SMH students accounted for 31 of over 125 hours of consultation provided to all handicapped students. Mean duration of consultation sessions for SMH students was approximately 39 minutes per session.

Thus, for the OT services that involved evaluation, direct and indirect services, there were a total of approximately 3250 sessions conducted for 1259 students. A very conservative estimate of the total number of hours required for these OT sessions was computed at slightly over 1665 hours. Duration of therapy sessions depended on the type of OT services provided. The longest mean duration was observed in small group sessions (1 hour, 40 minutes). The shortest mean duration was observed in consultation sessions (49 minutes). By far, the bulk of the services were provided to the largest handicapped group, namely, the learning disabled. Over 43% of the OT services described above were provided to learning disabled students, who comprised slightly over 38% of the total OT student population. However, these LD students tended to receive sessions of shorter duration. That is, LD students were seen more often for shorter periods of time than students with other handicapping conditions.

Approximately 330 students accounted for a total of 501 student absences. The number of absences per student ranged from 1 to 7, with a mean of 1.5. Information on the number of excused versus unexcused absences and on the types and frequency of various reasons for absences was not available through the statistical logs. Data on the number of therapist absences also were not available.

Other services performed and recorded by OT personnel included meetings and data collection activities such as the documentation of OT services provided. A total of 114 meetings were recorded involving services to 105 students. A total of 86 hours was required for the 114 meetings. Finally, data collection activities performed by OT personnel required at least 295 sessions and almost 132 hours for at least 152 students.

The major limitation of the present study is the conservative nature of the estimations as a result of missing, incomplete, or indecipherable handwritten data. Another limitation is that estimates are based on information regarding 1 month's of service, although selection of the calendar month was done after carefully considering time of school year, vacation periods, length of month, etc.

Recommendations that have evolved out of the review and analysis of the OT data include:

1. Strengthen the procedure used in documentation of OT services. Provide therapists with clear instructions and technical support to ensure accuracy in the reporting of OT data.

2. Include the orthopedic units in future data analyses of statewide OT services. Since the Department of Health has reorganized its service delivery system in July 1986, the School Health Services Branch has become better situated to establish reporting procedures for the orthopedic units similar to those procedures used in the general public school system.

3. Establish a computerized data management system for both occupational therapy and physical therapy. Consider the possibility of including vision/hearing screening data, since there are similar needs in all three service areas. Explore the feasibility of creating a network of microcomputer stations throughout the state so that information can be transmitted electronically from neighbor islands and Oahu districts. These improvements should alleviate some of the problems associated with handwritten reports and improperly photo-copied reports. Such a system would also help provide the responsiveness to retrieve information on service to handicapped students. For example, data on individual therapy could be analyzed across districts, schools, therapists, handicapping conditions, severity, and chronicity. At the minimum, efficiency in data collection would be increased. Some long-range planning based on information needs is recommended.

4. Review the data collection process. Re-assess data collection needs with repect to monitoring and improving occupational therapy as a related service to handicapped students. For example, information on the severity of the student's handicap or on chronicity, that is, the time interval between a student's commencement and termination of OT services, may be critical in examinations of the relative effectiveness of OT. Differentiation should also be made on the types of consultation provided (e.g., teacher-oriented, student-oriented) and the nature of the consultation, whether it be demonstration or discussion only. It is noteworthy that information on specific types of services (e.g., type of evaluation or treatment) is presently available. Future studies may find such data particularly useful in describing OT effectiveness.

A review of data collection needs may also identify unnecessary data elements. Such information should be deleted from the collection procedure to relieve some of the burden of data compilation.

5. Implement periodic evaluation studies to assess and improve services provided to the handicapped. Whether such evaluation efforts are done manually or through more sophisticated data management systems, one point is clear: there is a convincing, on-going need to keep OT decision-makers abreast of "vital statistics" on the type, extent, and effectiveness of OT services provided to a heterogeneous population of handicapped individuals.

A number of conclusions may be drawn from the occupational therapy (OT) data sampled in Spring 1985. First, OT personnel are involved in individual therapy, group therapy, consultation, diagnostic evaluations and re-evaluations, meetings, and data collection activities. No doubt, other duties performed by occupational therapists and therapy assistants are not routinely documented.

Second, comprehensive caseload levels of OT personnel were difficult to calculate due to (a) the varied nature of OT services provided, (b) the difference in the amounts of specific duties assigned to each therapist or assistant, and (c) the exclusion of two orthopedic units in the analysis; consequently, estimates were computed for "treatment only" caseload. Treatment only service includes direct (individual, small group, and large group) therapy sessions and indirect (consultation) therapy sessions. Thus, an extremely conservative estimate of average (mean) OT caseload was computed at slightly over 40 students per therapist or therapy assistant, based on a total of 1096 OT eligible students and 27 occupational therapists and therapy assistants.

Third, the largest consumer group of OT services was the learning disabled (LD). Approximately 45% of all therapy sessions were provided to LD students. The second and third largest consumers were the mildly mentally retarded (MIMR) and the severely multiply handicapped (SMH) who received 11.6% and 10.7% of the therapy sessions respectively. These three handicapping groups, LD, MIMR, and SMR, comprised 38.5%, 9.4% and 14.9% respectively, of all OT eligible students.

Fourth, in-depth analyses on frequency and duration provided information on statewide OT services to the handicapped. Such information has been hitherto unavailable anywhere in the United States. There were 160 diagnostic evaluations and re-evaluations of 104 students. The mean duration of each assessment session was 75 minutes. Estimates based on 671 students with complete data revealed that students typically received only three individual therapy sessions per month. The average duration of these individual therapy sessions was almost an hour-and-a-half. There were more small group (2-4 students) than large group (5 or more students) therapy sessions (720 and 135, respectively). A total of 223 students received small group therapy, while 73 students received large group therapy. Students in small group sessions were usually provided about 3 1/2 sessions per month, while students in large group sessions averaged less than 2 sessions per month. Mean duration times for small and large group therapy sessions were 1 hour, 40 minutes and 1 hour, 18 minutes respectively. Lastly, 154 students received a total of 232 consultation sessions, resulting in a mean of approximately 1 1/2 sessions per student, and a mean duration of 49 minutes per consultation session.

Thus, typical OT services (assessment, direct and indirect services) were provided to 1259 students who, as a group received approximately 3250 sessions in one month. A very conservative computation of total hours required to deliver these services was calculated at 1665 hours, or over 208 8-hour working days.

Fifth, a sizable number of therapy sessions were cancelled. Approximately 330 students accounted for a total of 501 student absences, or an average of 1 1/2 absences per absentee. Information on the factors accounting for absences, and the types of students most frequently absent has not been tabulated by OT personnel. Future studies should attempt to obtain such information since knowledge of specific problems encountered by handicapped children may be useful for planning purposes.

Finally, as noted in a similar study on physical therapy (Hirata et al., 1986), there is a fundamental need for systematic data collection and feedback to decision-makers to increase the efficacy of analyzing information useful in evaluating OT services to the handicapped. Tools potentially useful to help meet such a need include a computerized software program and microcomputer network that could function as a database management system. Information retrieval would be greatly facilitated, accuracy could be improved considerably, and the problem of missing data could be dealt with in a more efficient manner. Such a system could more effectively provide, for instance, unduplicated counts of occupational therapy and physical therapy students, and number of students served, regardless of multiple services provided.

VIII. SUMMARY STATISTICS ON PHYSICAL THERAPY SERVICES

INTRODUCTION

Currently, there is a need to systematically document the nature and frequency of physical therapy (PT) services provided to Hawaii's handicapped students. At present, data collection methods for monitoring physical therapy services consist of manually tabulating (a) summary sheets of monthly service totals, and (b) daily record sheets documenting the date, type, and length of therapy provided to individual students. Information on frequency and extent of different types of PT services provided to specific types of students has not been readily available.

Some basic and valuable information regarding the provision of physical therapy is included in Annual Reports published by the State Department of Health, School Health Services Branch. These Annual Reports contain a section on "School Health Support Services" that provides data on PT referrals, and the number of students receiving PT services, by handicapping condition and district (Hawaii State Department of Health, 1985). However, information on the types of services provided and the number of and reasons for cancellation of scheduled therapy sessions has not been published.

The purpose of the present study was to retrieve summative information on PT monthly statistics. These descriptive statistics will provide a "snap-shot" view of monthly PT services from a state-wide perspective. The evaluation orientation is that of "input evaluation" in the Context-Input-Process-Product model advocated by Stufflebeam et al. (1971). The descriptive input evaluation data serves as an important first step and a foundation upon which queries of effectiveness may be addressed.

METHOD

Population

An estimated total of 751 handicapped students in the Hawaii public school system were eligible in the spring of 1985 to receive PT services from the Department of Health, School Health Services Branch and Crippled Children Services Branch. These estimates are based upon statistical summary reports submitted for the month of May 1985 by physical therapy personnel. Approximately 87 of the 751 handicapped students were enrolled in the Jefferson Orthopedic Unit (Honolulu district) and its affiliate, Campbell School Complex Orthopedic Unit (Leeward district). Information on 87 students in both orthopedic units was either unavailable or incomplete. Information was available for the remaining 664 handicapped students.

Instruments

Two data collection instruments served as sources for compiling summary statistics on PT services. The first instrument was a single, monthly summary page containing information on total number of referrals for evaluation, number of students assigned to caseload, number of students

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served, and number of evaluations conducted. The number of students served was further categorized by handicapping condition.

The second instrument was the "daily record of therapy services" frequently referred to as the "statistical log." Statistical log sheets are submitted by physical therapists and assistants and include student information on type and amount of service received, handicapping condition, school, district, therapist classification (physical tharapists or physical therapy assistants), and number and type of absences.

Procedure

The data collection effort consisted of reviewing and analyzing the monthly report summary sheets and daily record of therapy services (statistical logs). A month's worth of information was collected in Spring 1985 (viz., May) for each of the seven districts statewide. Subsequent data analyses included frequency, descriptive, and crosstabulation procedures.

RESULTS

Report Summaries

Table 31 contains the breakdown, by district, of the 17 report summaries. Descriptive analyses of estimated monthly physical therapy (PT) services are contained in Table 32. The estimates were based on information from 17 report summary sheets submitted by 16 licensed physical therapists and 1 physical therapy assistant. All 17 report summaries are reflective of a month's worth of physical therapy services (May 1985) to Hawaii's public school students.

Table 33 shows a breakdown by handicapping condition of the number of physical therapy sessions provided in May 1985. Appendix H contains a list of abbreviations used for certified handicapping conditions. The handicapping condition "OTHER" contained information on individuals with eligibility certification categories, "other health impaired," "other health impaired-autism," "speech impaired," and information on individuals who at the time were non-certified.

Daily Record of Therapy Services (Statistical Logs)

The distribution of students eligible for physical therapy as a special education service, by district, is shown in Figure 18. The largest portion of students were enrolled in Honolulu district schools (29%). Physical therapy caseloads were comprised of a total of 664 students. A conservative estimate of treatment only caseload was calculated at slightly over 39 students per therapist or therapy assistant. The estimate does not include diagnostic evaluations, re-evaluations, meetings, or other services (e.g.,transdisciplinary).

Table 34 shows the number and percent of students attending Hawaii public schools who were eligible to receive physical therapy as a special education related service, by handicapping condition.

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Table 31

Number of Physical Therapy Summary Reports, by District

District	No. of Summary Reports	Percent
Honolulu	5	29.4
Central	3	17.6
Leeward	2	11.8
Windward	3	17.6
Hawaii	2	11.8
Maui	1	5.9
Kauai	1	5.9
TOTAL	**17**	**100.0**

Table 32

Descriptive Analyses of Estimated Monthly Physical Therapy Services

	No. and % of Monthly Summary Reports Used in Calculation (Total=17)	Per Summary Report				
		RANGE		AVERAGE		
		Min.	Max.	Mean	Median	TOTAL
No. of Students Assigned	17 (100%)	9	60	39.1	38	664
No. of Students Served	17 (100%)	5	53	29.0	31	493
% of Assigned Students Served						74.3%
No. of Referrals	17 (100%)	0	16	3.4	2	57
No. of New Students Evaluated	15 (88%)	0	14	2.1	1	31
No. Recommended Service	10 (59%)	0	14	2.4	1	24
% Recommended Service						77.4%
No. of Referred Re-Evaluations	17 (100%)	0	7	1.4	0	23
No. Recommended Service	10 (59%)	0	5	1.8	1.5	18
% Recommended Service						78.3%
No. of Non-Referred Re-Evaluations	14 (82%)	0	5	1.1	0	16
No. Recommended Service	7 (41%)	0	4	1.1	1	8
% Recommended Service						50.0%
No. of Teacher Consultations	16 (94%)	0	11	4.8	4	76
No. of Schools Serviced	16 (94%)	1	12	7.5	8	120

Table 33

Number of Monthly Physical Therapy (PT) Sessions Provided, by Handicapping Condition (Statewide Totals)

Handicap. Condition	Eligibility Cert. Code	No. and % of Monthly Summary Reports Used in Calculation (Total=16)	No. of PT Sessions per Summary Report				TOTAL	
			RANGE		AVERAGE			
			Min.	Max.	Mean	Median	No. of PT Sessions	Percent
MIMR	01	8 (50%)	1	15	7.6	7.5	61	4.9
MOMR	02	12 (75%)	1	27	9.9	5.5	119	9.7
SMR/PMR	03,04	6 (38%)	1	12	5.7	4.0	34	2.8
LD	05	12 (75%)	2	51	15.1	12.0	181	14.7
EH	06	2 (12%)	3	4	3.5	3.5	7	0.6
VI/BL	07,08	5 (29%)	1	17	6.0	4.0	30	2.4
HI/DF	09,10	5 (29%)	1	7	3.4	2.0	17	1.4
OH	11A	15 (94%)	1	40	16.1	10.0	242	19.6
DB	13	2 (12%)	0	4	2.0	2.0	4	.3
SMH	14	14 (88%)	1	75	24.9	22.5	348	28.2
LI	15	11 (73%)	2	53	11.3	5.0	124	10.1
OTHER	11B,11C,12, Non-Cert.	10 (67%)	2	12	6.7	6.5	67	5.4
TOTAL							**1234**	**100.0**

Note. Based on Spring 1985 Monthly Summary Reports

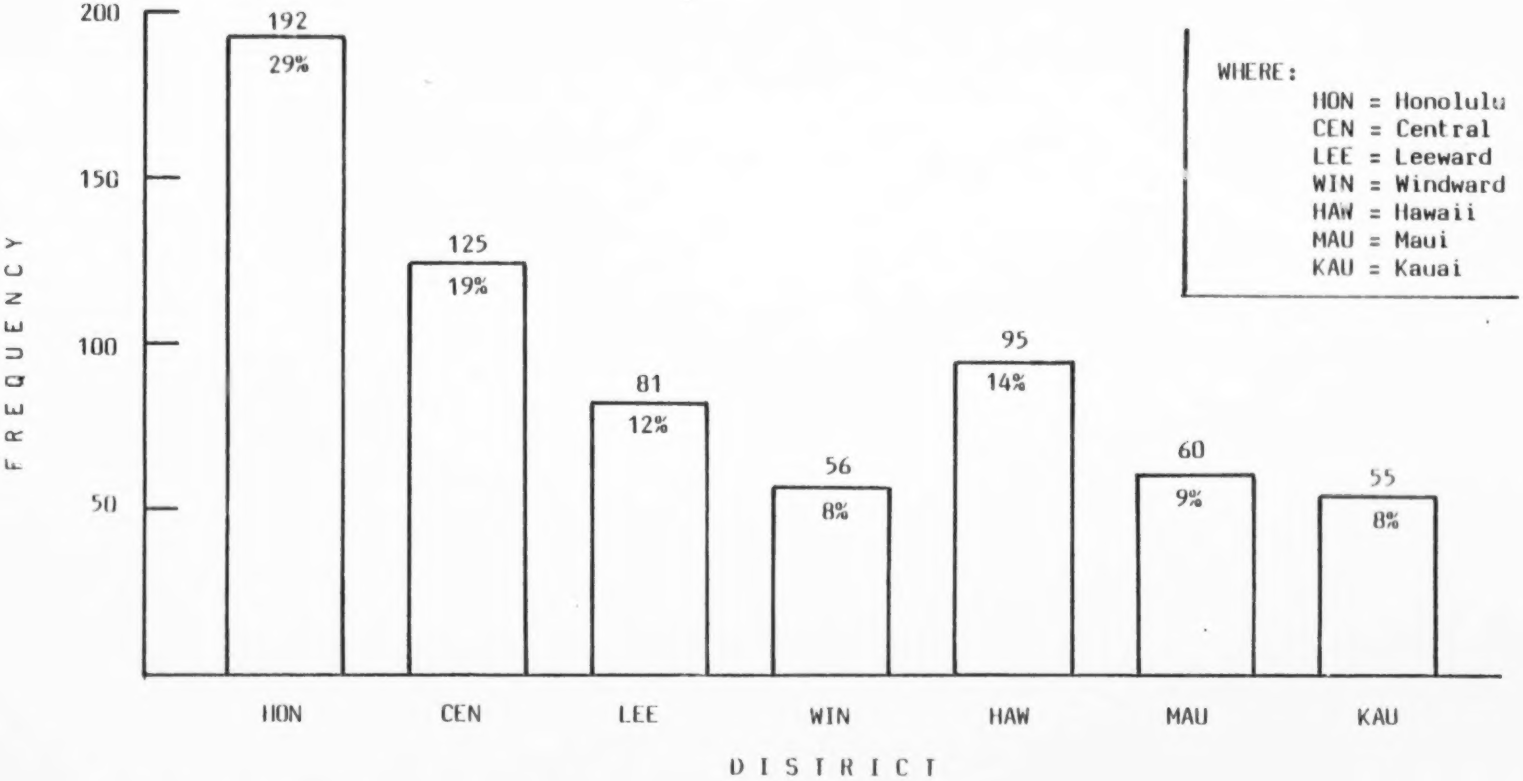

Figure 18. Number of students eligible for physical therapy as a special education related service, by district.

Table 34

Number of Students Eligible to Receive Physical Therapy as a Special Education Related Service, by Handicapping Condition

Handicapping Condition	Eligibility Certification Code	Number of Students	Percent
MIMR	01	50	7.5
MOMR	02	59	8.9
SMR/PMR	03,04	29	4.4
LD	05	82	12.3
EH	06	2	.3
VI	07,08	10	1.5
HI	09,10	10	1.5
OH	11A	117	17.6
DB	13	1	.2
SMH	14	171	25.8
LI	15	66	9.9
OTHER	11B,11C,12, non-certified	32	4.8
Information not available		35	5.3
TOTAL		**664**	**100.0**

Table 35 contains summary statistics on the PT services provided as special education related service to students enrolled in Hawaii public schools. Available data include the number of evaluations conducted, the number and type of direct services provided, the number of indirect services (consultations) provided, and the number and type of absences reported. Information was also available on the number and type of transdisciplinary services, and the number of Individual Education Program (IEP) planning sessions in which physical therapists or physical therapy assistants participated.

Table 36 provides summary information on the type and number of physical therapy services, by number of students, and number of sessions, per handicapping condition. Data on the number of students actually served and the number of sessions conducted are presented for each type of physical therapy service (diagnostic evaluation, direct and indirect therapy). Figure 19 portrays graphically, the relative number of evaluations conducted in May 1985, by handicapping condition. Similarly, Figure 20 presents a pictorial representation of the amount and type of direct physical therapy service provided in May 1985, by handicapping condition. Finally, Figure 21 shows the amount of indirect (consultative) physical therapy service provided in May 1985, by handicapping condition.

DISCUSSION

The result of the present study is a statewide "snap-shot" of PT services to 664 eligible handicapped students enrolled in Hawaii's public schools, excluding an additional 87 students enrolled in orthopedic units in two separate districts. Information from the two units, namely, Jefferson Orthopedic Unit (Honolulu district) and Campbell School Complex Orthopedic Unit (Leeward district) was either unavailable or incomplete. The total estimated statewide count of students eligible for PT services was 751 (87 in addition to 664).

The estimates derived from the May data were thus conservative approximations of the amount of PT services provided. Two additional factors also contributed to the conservative estimates. The first was a result of missing data within the report summaries or the daily record of therapy services (statistical logs). Occasionally information was not reported for variables such as handicapping condition. The second factor was a problem with the reporting procedure. For example, when blanks were encountered in the report summaries or statistical logs, it was not readily apparent whether blanks represented missing data or zeros. PT supervisory personnel were subsequently apprised of the difficulties encountered in the interpretation of the reported data.

Report Summaries

Physical therapists were assigned a total of 664 students in May 1985, and provided service to 493 students (74.25%). It is not known specifically why over 25% of the eligible students did not receive service during May. Some students may be seen less frequently than once per month. Another possible reason may be that certain students receive therapy on a consultation basis and such consultations are not consistently recorded, especially if the consultation session was brief or spontaneous while

Table 35

Estimated Frequency and Type of Monthly Physical Therapy (PT) Provided as a Special Education Related Service

		Sessions per Student				
	No. of Students	RANGE		AVERAGE		Total No. of Sessions
		Min.	Max.	Mean	Median	
PT Services						
Evaluations	59	1	4	1.2	1	70
Direct PT Services	352					1021
Individual	254	1	9	3.1	3	732
Group	98	1	8	3.4	4	289
Indirect PT Services (consultation)	144	1	4	1.3	1	181
TOTAL PT Services	**555**					**1272**
Other Services						
IEP Conferences	52	1	2	1.0	1	53
Transdisciplinary Svs.	51					79
Individual	47	1	5	1.6	1	75
Group	4	1	1	1.0	1	4
TOTAL Other Services	**103**					**132**
Absences						
Student Absences	159					234
Excused	28	1	5	1.5	1	40
Unexcused	131	1	5	1.5	1	194
Therapist Absences		1	1	1.0	1	8
TOTAL Absences	**159**					**242**

Note. Estimates are conservative due to missing or incomplete information.

Table 36

Type and Number of Physical Therapy Services, by Number of Students Served and Number of Sessions per Handicapping Condition (HC)

	HANDICAPPING CONDITION													
	MIMR	MOMR	SMR/ PMR	LD	EH	VI/ BL	HI/ DF	OH	DB	SMH	LI	OTHER	HC CODE UNAVAIL.	TOTAL
EVALUATIONS														
No. of sessions (row %)	4 (5.7)	2 (2.9)	1 (1.4)	9 (12.9)	0 (0.0)	0 (0.0)	0 (0.0)	5 (7.1)	0 (0.0)	9 (12.9)	13 (18.6)	14 (20.0)	13 (18.6)	70 (100.0)
No. of students w/complete data (row %)	4 (6.8)	2 (3.4)	1 (1.7)	9 (15.3)	0 (0.0)	0 (0.0)	0 (0.0)	5 (8.5)	0 (0.0)	8 (13.6)	11 (18.6)	12 (20.3)	7 (11.9)	59 (100.0)
No. of students w/incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (100.0)
Total no. of students (row %)	4 (6.8)	2 (3.4)	1 (0.7)	9 (15.3)	0 (0.0)	0 (0.0)	0 (0.0)	5 (8.5)	0 (0.0)	8 (13.6)	11 (18.6)	12 (20.3)	7 (11.9)	59 (100.0)
DIRECT PT SERVICES														
INDIVIDUAL														
No. of sessions (row %)	28 (3.8)	37 (5.1)	20 (2.7)	90 (12.3)	3 (0.4)	11 (1.5)	10 (1.4)	153 (20.9)	1 (0.1)	203 (27.7)	79 (10.8)	25 (3.4)	73 (10.0)	733 (100.0)
No. of students w/complete data (row %)	11 (4.6)	15 (6.3)	8 (3.4)	33 (13.9)	1 (0.4)	5 (2.1)	3 (1.3)	42 (17.7)	1 (0.4)	71 (29.8)	23 (9.7)	7 (2.9)	18 (7.6)	238 (100.0)
No. of students w/incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (25.0)	0 (0.0)	5 (31.3)	4 (25.0)	1 (6.3)	2 (12.5)	16 (100.0)
Total no. of students (row %)	11 (4.3)	15 (5.9)	8 (3.2)	33 (13.0)	1 (0.4)	5 (2.0)	3 (1.2)	46 (18.1)	1 (0.4)	76 (29.9)	27 (10.6)	8 (3.2)	20 (7.9)	254 (100.0)
GROUP														
No. of sessions (row %)	25 (8.7)	55 (19.0)	0 (0.0)	73 (25.3)	0 (0.0)	12 (4.2)	2 (0.7)	27 (9.3)	3 (1.0)	3 (1.0)	53 (18.3)	17 (5.9)	19 (6.6)	209 (100.0)
No. of students w/complete data (row %)	11 (13.1)	15 (17.9)	0 (0.0)	22 (26.2)	0 (0.0)	3 (3.6)	1 (1.2)	5 (6.0)	1 (1.2)	1 (1.2)	16 (19.1)	4 (4.8)	5 (6.0)	84 (100.0)
No. of students w/incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (28.6)	0 (0.0)	4 (28.6)	4 (28.6)	1 (7.1)	1 (7.1)	14 (100.0)
Total no. of students (row %)	11 (11.2)	15 (15.3)	0 (0.0)	22 (22.5)	0 (0.0)	3 (3.1)	1 (1.0)	9 (9.2)	1 (1.0)	5 (5.1)	20 (20.4)	5 (5.1)	6 (6.1)	98 (100.0)
INDIRECT PT SERVICES (Consultation)														
No. of sessions (row %)	11 (6.1)	21 (11.6)	9 (5.0)	5 (2.8)	1 (0.6)	5 (2.8)	3 (1.7)	20 (11.1)	0 (0.0)	75 (41.4)	14 (7.7)	5 (2.8)	12 (6.6)	181 (100.0)
No. of students w/complete data (row %)	9 (6.3)	16 (11.2)	8 (5.6)	5 (3.5)	1 (0.7)	3 (2.1)	3 (2.1)	15 (10.5)	0 (0.0)	57 (39.9)	13 (9.1)	4 (2.8)	9 (6.3)	143 (100.0)
No. of students w/incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)
Total no. of students (row %)	9 (6.3)	16 (11.1)	8 (5.6)	5 (3.5)	1 (0.7)	3 (2.1)	3 (2.1)	15 (10.4)	0 (0.0)	58 (40.3)	13 (9.0)	4 (2.8)	9 (6.3)	144 (100.0)
TOTAL PT SERVICES														
No. of sessions (row %)	68 (5.3)	115 (9.0)	30 (2.4)	177 (13.9)	4 (0.3)	28 (2.2)	15 (1.2)	205 (16.1)	4 (0.3)	290 (22.8)	159 (12.5)	61 (4.8)	117 (9.2)	1273 (100.0)
No. of students w/complete data (row %)	35 (6.7)	48 (9.2)	17 (3.2)	69 (13.2)	2 (0.4)	11 (2.1)	7 (1.3)	67 (12.8)	2 (0.4)	137 (26.2)	63 (12.0)	27 (5.2)	39 (7.4)	524 (100.0)
No. of students w/incomplete data (row %)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (25.8)	0 (0.0)	10 (32.3)	8 (25.8)	2 (6.5)	3 (9.7)	31 (100.0)
Total no. of students (row %)	35 (6.3)	48 (8.7)	17 (3.1)	69 (12.4)	2 (0.4)	11 (2.0)	7 (1.3)	75 (13.5)	2 (0.4)	147 (26.5)	71 (12.8)	29 (5.2)	42 (7.6)	555 (100.0)

Note. Total PT Services contain duplicated count of students across type of physical therapy service.

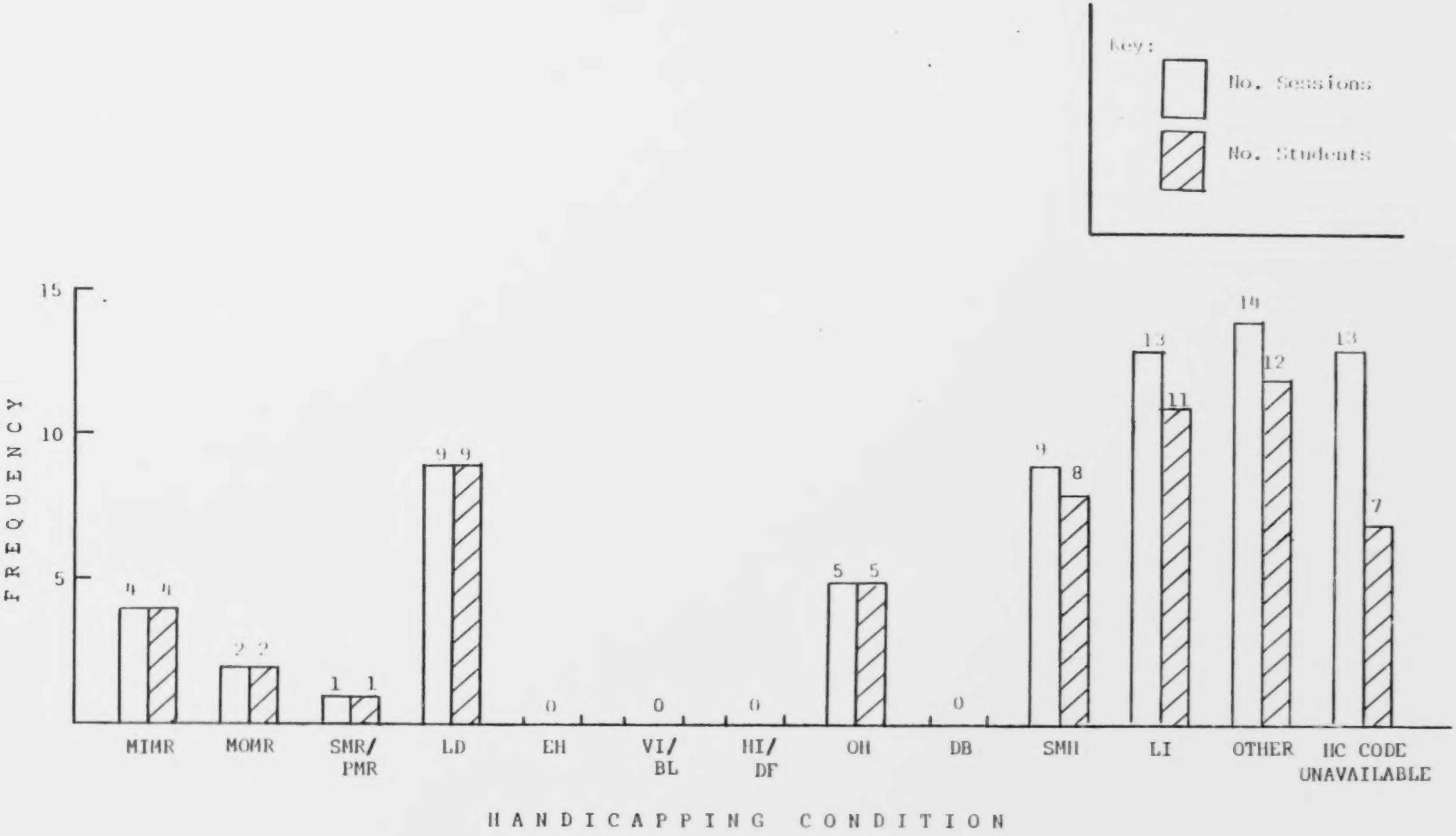

Figure 19. Number of diagnostic evaluations conducted in May 1985 for physical therapy, by number of students and number of sessions per handicapping condition (HC).

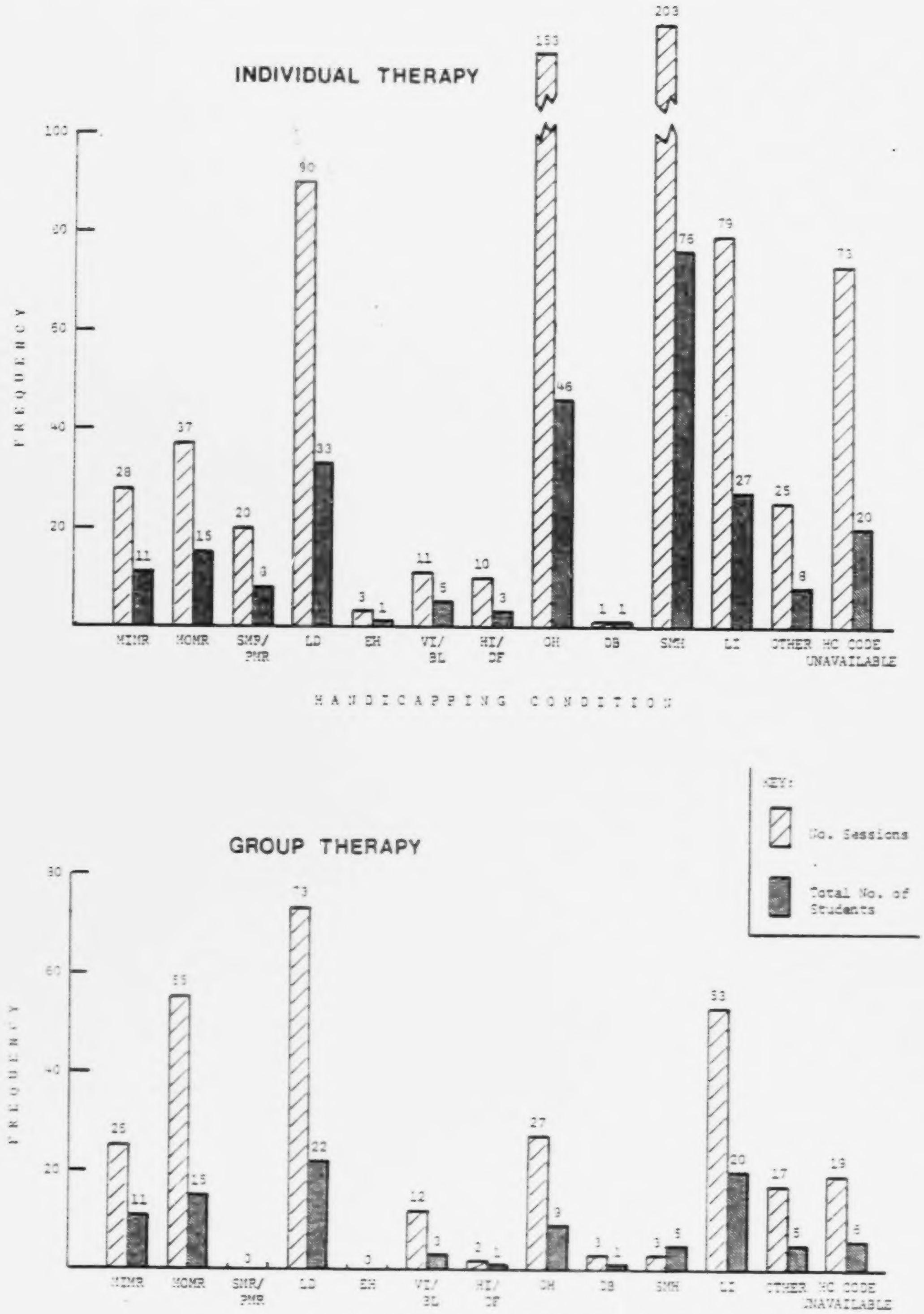

Figure 20. Number and type of direct (Individual and Group) physical therapy sessions and number of students who were provided services for May 1985, by handicapping condition (HC).

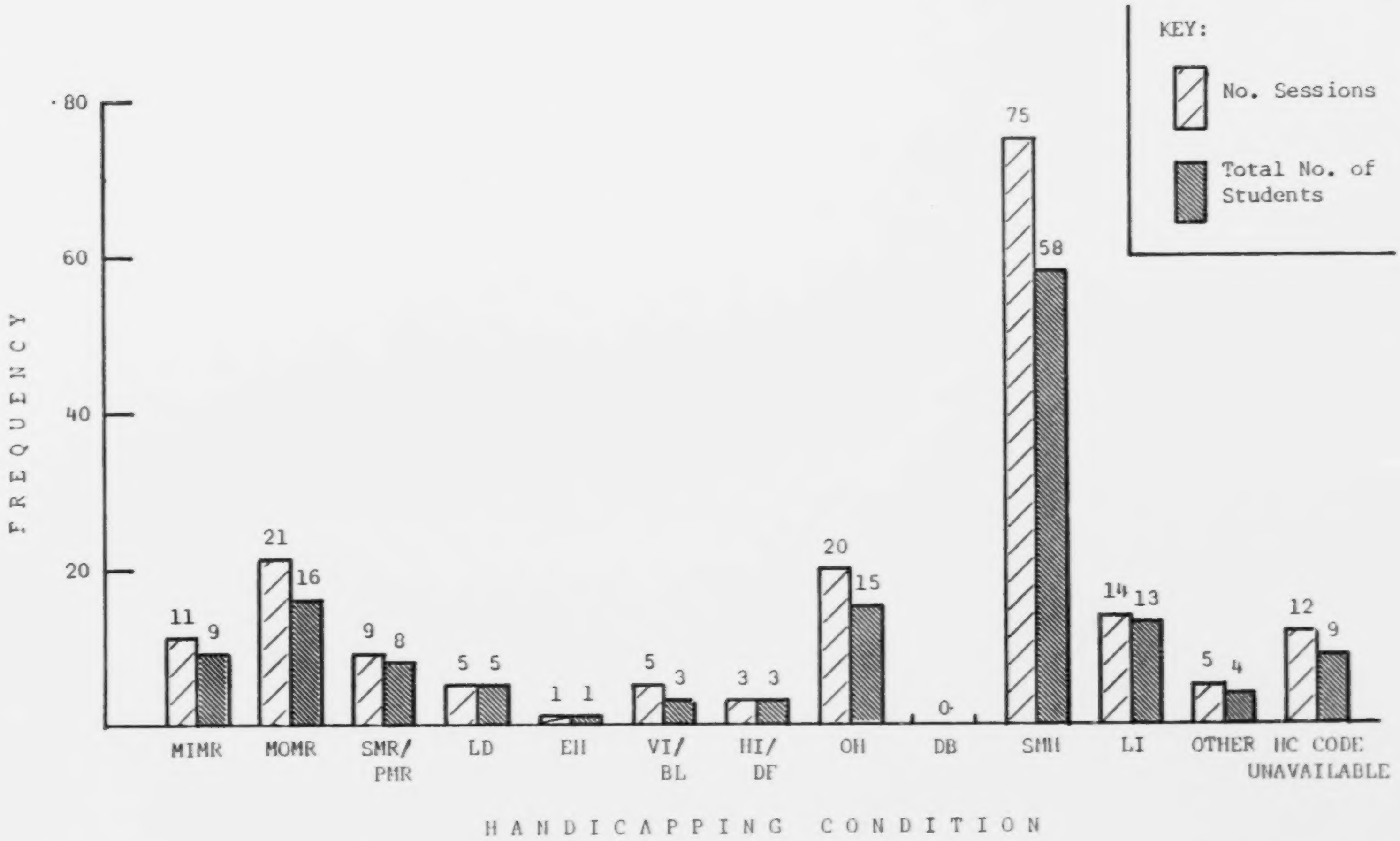

Figure 21. Number of indirect (consultative) physical therapy sessions and number of students who were provided services for May 1985, by handicapping condition (HC).

discussion with the teacher was primarily focused on another student. Still another reason may be that services provided in May are atypical since the school year is nearing its end. Finally, in light of the current high caseload levels of PT personnel, many therapists may have difficulty in systematically recording every activity for each student. State and district administrators have indicated fears that PT caseloads are quite high (Hirata, McClelland & Wada, 1986a). Such a condition may be a contributing factor. Further investigation of factors accounting for the anomaly should be considered.

A statewide total of 57 referrals was recorded, with an average (mean) of over 3 referrals per therapist. The range in the number of referrals per therapist, however, was quite wide (from 0 to 16). Physical therapy personnel conducted evaluations on 31 new students in May 1985. The percentage of new student evaluations which culminated in a recommendation for services was substantially higher for physical therapy (77.4%) than the percentage for occupational therapy (42%) (cf. Hirata, McClelland, Andre, Wada, & Tosaki 1986a). A similar proportion of "referred re-evaluations" resulted in a recommendation for services (78.3%). Only 50% of "non-referred re-evaluations" resulted in recommended services. Non-referred re-evaluations are "in-house" re-evaluations not referred by teachers or diagnostic teams. It may be worthy to follow-up with research that will help clarify what criteria different therapists use in determining service eligibility and continuation.

A total of 76 teacher consultations were reported through the report summary sheets. It is not known how many student-oriented consultations had taken place and remained undocumented. A total of at least 120 of Hawaii's 232 public schools were serviced. Information on number and schools serviced by one therapist was not available.

The largest number of PT sessions were provided to the severely multiply handicapped (384 of 1234 sessions; 28.2%). The second largest number of sessions were provided to the orthopedically handicapped (242 of 1234 sessions; 19.6%). The smallest number of sessions were conducted with deaf-blind students; a total of four sessions (0.3%) were provided by two therapists. The handicapping category that was serviced by the largest number of therapists (15) was the orthopedically handicapped (OH). Information from one therapist regarding these students was not available.

Daily Record of Therapy Sessions (Statistical Logs)

A conservative estimate of the average physical therapy caseload was computed at slightly over 39 students per therapist. The estimate was quite conservative due to (a) the exclusion of 87 orthopedic unit students that, in May, were monitored by the Department of Health, Crippled Children Services Branch, and (b) the exclusion of diagnostic evaluations, re-evaluations, meetings, and other services (e.g., transdisciplinary).

The largest percentage of students eligible for PT as a related service were from Honolulu district schools (29%). Severely multiply handicapped (SMH) students comprised the largest contingent; a total of 171 students (25.8%) were certified eligible. At the lower end of the spectrum, only 1 deaf-blind student was reported eligible for PT. Unfortunately, therapists did not report a handicapping condition for 35 students.

Physical therapists conducted a total of 70 evaluations and re-evaluations on a total of 59 students. Individual therapy was provided to 254 students. Information on 16 students who received individual therapy was not available. The remaining 238 students received a monthly mean average of 3.1 individual sessions and a total of 732 individual therapy sessions. Seventy-six students in the SMH category collectively received the largest portion of individual therapy sessions; these SMH students were provided with a total of at least 203 sessions (almost 28% of the total number of individual therapy sessions). Information was unavailable on 5 SMH students.

Group therapy was reportedly provided to 98 students. Group therapy data for 14 students was unavailable. The remaining 84 students received a mean average of 3.4 group sessions for a total of 289 group therapy sessions. The most frequent consumers of group therapy were the learning disabled (LD) students. Twenty-two LD students collectively accounted for the largest number of group therapy sessions; these LD students received over 25% of all reported group therapy sessions (73 out of 289 sessions).

Physical therapists also utilized consultation as a service option. A total of 181 consultation sessions were provided to 143 students resulting in a mean of approximately 1.3 sessions per student. Therapists utilized consultation most often with SMH students. A total of 58 SMH students were served for a total of 75 consultation sessions. Data on consultation services for 1 SMH student was not available.

Project staff collected data on student and therapist attendance. A total of 234 student absences were recorded. The total number of unexcused absences was 194. Therapists also provided information on excused student absences. A total of 40 excused absences, involving 27 students was reported. In addition, 8 therapist absences were reported.

Therapists also participated in Individualized Education Program (IEP) meetings; they recorded 53 such sessions in May 1985 that involved 52 students. Meetings on SMH students were the most frequently reported. IEP meetings for 13 SMH students were recorded and therapists attended a total of 13 sessions.

Other physical therapy services included transdisciplinary sessions. A total of 75 transdisciplinary individual sessions were conducted for 47 students. Some therapy programs also called for group transdisciplinary sessions. Therapists recorded four group transdisciplinary sessions. Four students received one session each.

As in a previous study on occupational therapy services (Hirata et al., 1986a), the major limitation of the present study is the conservative nature of the estimations as a result of missing, incomplete, or indecipherable handwritten data. Another limitation is that estimates are based on only 1 of 12 calendar months of 1985.

Recommendations that have evolved out of the data analyses include:

1. Strengthen the procedure used in documentation of PT services. Provide therapists with clear instructions and technical support to ensure accuracy in the reporting of PT data.

2. Include the orthopedic units in future data analyses of statewide PT services. Since the Department of Health reorganized its service delivery system in July 1986, the School Health Services Section is now able to establish reporting procedures for the orthopedic units similar to those procedures used in the general public school system.

3. Establish a computerized data management system for both physical therapy and occupational therapy. Consider the possibility of including vision/hearing screening data also, since there are similar needs in all three service areas. Explore the feasibility of creating a network of microcomputer stations throughout the State so that information can be sent electronically from neighbor islands and Oahu districts. This should help alleviate problems associated with handwritten reports and improperly photo-copied reports. Such a system would also help provide the responsiveness needed to retrieve information on service to handicapped students from a wide spectrum of perspectives. For example, data on individual therapy could be analyzed across districts, schools, therapists, handicapping conditions, severity, and chronicity. At the minimum, efficiency in data collection would be increased. Some long-range planning based on information needs is recommended.

4. Review the data collection process. Re-assess data collection needs with respect to monitoring and improving physical therapy as a related service to handicapped students. For example, therapists presently report frequency of PT service, but do not report information on the duration (number of minutes) of such PT sessions. Evaluative comparisons require information on both frequency and duration. Also information on the severity of the student's handicap or on the time interval between a student's commencement and termination of PT services should be documented. Differentiation should also be made on the types of consultation provided. At least two distinct types of consultative service are recognized: teacher-oriented and student-oriented. Each of these two basic types could, in turn, be classified as demonstration or discussion only.

5. Implement periodic evaluation studies that help in assessing and improving services provided to the handicapped. Regardless of the method used in evaluating PT services, one point is clear: there is an on-going need to keep PT decision-makers aware of "vital statistics" on the type, extent and effectiveness of PT services provided to a heterogeneous population of handicapped individuals.

Several conclusions may be drawn from the monthly physical therapy (PT) data. First, the present "snap-shot" of monthly services reveal that quite a variety of services were being provided by PT personnel. These services ranged from new student diagnostic evaluations to direct and indirect therapy and further included IEP planning and transdisciplinary sessions.

Second, the largest consumers of PT services tended to be severely multiply handicapped (SMH), orthopedically handicapped (OH), and learning disabled (LD) students, depending on the type of services provided. SMH students received the largest number of individual therapy and consultation sessions. OH students were also recipients of a large number of individual therapy sessions. LD students on the other hand comprised the largest consumer group for group therapy services and the third largest group for individual therapy sessions. Learning Impaired (LI) students also received a substantial amount of direct (individual and group) therapy sessions.

Third, there is a need for systematic data collection and feedback to decision-makers to increase the efficiency of analyzing information useful for evaluation of PT services to the handicapped. Tools potentially useful to help meet such a need include a computerized software program and microcomputer network that could function as a database management system. Information retrieval would be greatly facilitated, accuracy could be improved, and the problem of missing data could be dealt with in a more efficient manner.

IX. EVALUATIONS TO DETERMINE STUDENT ELIGIBILITY FOR RELATED SERVICES AND RECOMMENDATIONS FORWARDED BY RELATED SERVICE PROFESSIONALS

INTRODUCTION

An examination and understanding of the evaluations related service providers conduct to determine student eligibility for related services is critically needed for a number of reasons. Firstly, perceptual discrepancies often arise between classroom observations of student skills or needs and formal evaluations conducted by related service professionals. In order to understand such differences in perceptions of student needs and skills, it is necessary to acquire information not only about informal observations in the classroom but also about formal evaluations conducted to determine service eligibilty and the service recommendations which are based upon those evaluations.

Secondly, direct service providers have alleged through informal conversations that they frequently are subjected to moderate and sometimes intense pressure to modify their professional judgments regarding service needs of exceptional students. How often does external pressure result in modifications of service delivery and to what extent should such pressure be counteracted? It is also not clear what impact, if any, such pressure might subtly have upon the quality of evaluations therapists subsequently perform.

The third issue regards the specific instruments and procedures utilized in the course of formal evaluations. Although related service providers use a wide range of standardized instruments to determine student eligibility or need for related services, few of these instruments have gained wide acceptance in the national educational or health service communities. Few of them possess acceptable standards of validity and reliability.

Finally, there has been expressed a wide-spread concern that services to children may vary from district to district and from therapist to therapist. Many therapists and administrators have advocated a set of criteria or standards by which service decisions and recommendations can be made as one recourse to service and recommendation variability.

The purpose of the present study is to obtain information on (a) evaluations related service professionals conduct to determine student need for special education related services, and (b) the recommendations that these professionals provide after the evaluations have been conducted.

Information collected through the study should enable related services professionals and state and district level administrators to (a) assess and improve the utilization of tests/and or procedures normally used in the course of evaluations, (b) ascertain the need for guidelines and/or criteria used to determine student need or eligibility for related services, (c) obtain a more complete understanding of how related service professionals determine student needs for related services, and (d) discover factors affecting decisions regarding the frequency, nature, and duration of related services.

METHOD

Interview Participants

A 32-question interview was conducted with a stratified random sample of 5 occupational therapists, 5 physical therapists, 16 speech therapists, and 2 clinical psychologists on the island of Oahu. Speech therapists were employed by the Hawaii State Department of Education. Occupational therapists, physical therapists, and clinical psychologists were employees of the Hawaii State Department of Health. Resources did not permit a sampling of personnel on the three neighbor island districts. A total of 28 professionals from four educational districts on Oahu were interviewed. Eight interviewees worked in Honolulu district, 7 came from Central district, 8 were interviewed in Leeward district, and 5 worked in Windward district. Related service professionals selected for the interviews were considered to be representative of related service providers in the State of Hawaii.

Procedure

In September 1985, one AIRS Project staff member interviewed 28 related service professionals on Oahu who evaluated public school students to determine student need or eligibility for either occupational therapy, physical therapy, speech therapy, or mental health services. Twenty-seven interviews were conducted in person; one interview was completed in a telephone conversation. Each interview ranged from 30 minutes to 1 hour in duration. Most of the interviews occured at the interviewee's work office or work site; at least two were conducted in the AIRS Project office. The interviewer encouraged responses by providing examples or further explanations to questions which may not have been initially understood. All personnel interviewed were assured that individual responses would remain anonymous and that responses would be presented in frequency or summative data form. A copy of interview questions appears in Appendix E.

Data collected in the interview included:

1. Interviewee's current position title.
2. Length of employment with current employer.
3. Length of employment in current position.
4. Length of employment in current occupation.
5. District or catchment area of employment.
6. Largest caseload in the 1984-1985 school year.
7. Anticipation to work for current employer in same type of position in 1 year, 5 years, and 10 years.
8. Instruments and/or procedures normally used in the course of the evaluation to determine student need for services.
9. Definition of the type of student needing or eligible for the service for which the interviewee conducted evaluations.
10. Knowledge of any currently published or explicit guidelines and/or criteria in Hawaii to determine student need or eligibility for services.
11. Perception of any difference between the purposes/concepts of guidelines and the criteria regarding need for services.
12. Identification of the establisher of such guidelines or criteria.
13. Establishment of such guidelines or criteria.

14. Method through which they were established.

15. Perceived flexibility of examiners/therapists in Hawaii in adhering to such guidelines or criteria.

16. Conditions under which professionals might deviate from the guidelines or criteria.

17. Basis upon which recommendations regarding service delivery are made.

18. Perceived extent to which recommendations would vary from examiner to examiner regarding the nature, frequency, and duration of service if all peers were to evaluate the same child, obtain the same results, and observe the same behavior from that child.

19. Estimated causes for such variation if there were to be any variation.

20. Examiner's input or role in determining the frequency, nature, and duration of the services for which evaluations are conducted.

21. Site of decisions regarding frequency, nature, and duration of services.

22. Process by which decisions are made.

23. Factors determining the frequency of service delivery.

24. Factors determining the nature or type of service delivery.

25. Factors determining the duration of each session of service delivery.

26. Pressure or requirements to modify recommendations regarding the nature, frequency, and duration of service.

27. Frequency of occurance of such pressure or requirements.

28. Source of the pressure or requirements to modify recommendations.

29. Inservice training received which helped to improve evaluations and recommendations.

30. Assistance considered to be most valuable in the improvement of evaluations and recommendations.

31. Individual efforts which could be undertaken to improve evaluations and recommendations.

32. Types of recommendations/suggestions normally presented following completion of evaluations.

RESULTS

Demographic Information on Employment

Demographic information on the 28 interviewees was collected from questions 1 thru 7 in the interview. Participants had been employed by the State of Hawaii an average of 5.21 years (range .4 years to 19.0 years). Average length of service in current position was 2.96 years (range .1 year to 15.0 years). Interviewees had been employed in their current occupations an average of 7.92 years (range .6 to 27.0).

Figure 22 displays the largest caseload figures of the interviewees for the 1984-1985 school year. Approximate numbers were requested. The average direct service caseload was 36 students (range 15-56). An average of 9 students were seen for consultation services (range 0 to 40). Five respondents indicated that they had "other" types of students (students not classified as receiving either direct or consultation services). "Other" caseload ranged from 0 to 29 students (mean = 2). Total caseload per

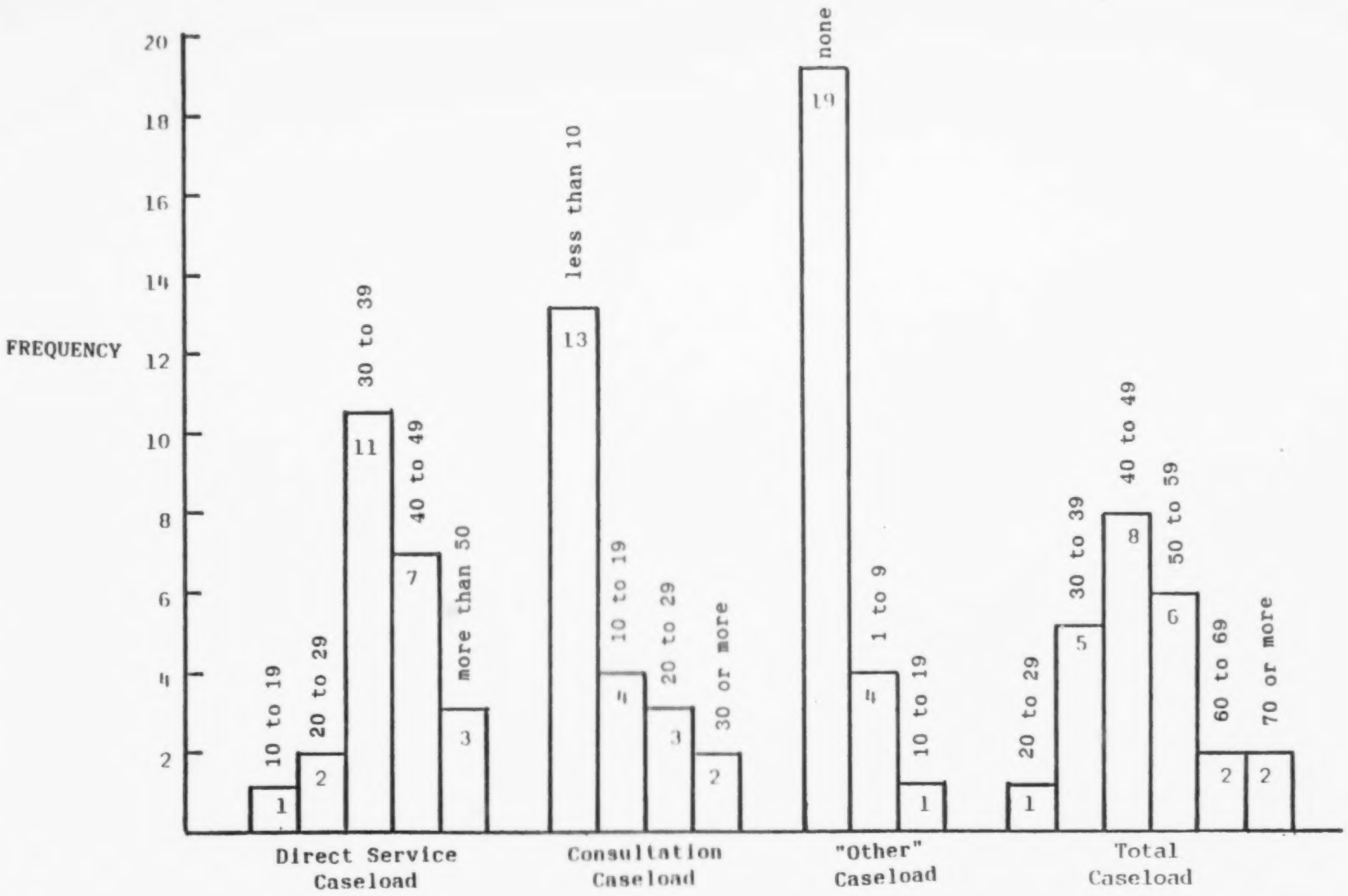

Figure 22. Largest caseload of interviewees in the 1984-1985 school year.

therapist averaged 47 students (range 20 to 80). Four respondents conducted only evaluations, therefore they had no caseload, as such.

Question 7 in the interview asked interviewees if they anticipated working the same type of position in 1 year, 5 years, and 10 years. Ninety-three percent of the respondents anticipated working in the same type of position 1 year from the time of the interview. Thirty-six percent and 29% anticipated working in the same type of position in 5 and 10 years, respectively.

Instruments Normally Used in Evaluations

Each respondent conducted evaluations to determine student need for either occupational therapy, physical therapy, speech/language therapy, or mental health services. Each respondent listed the test instruments and procedures normally used in the course of evaluations. These included standardized instruments and informal observations, interviews, or techniques. Speech therapists utilized a variety of instruments and observations depending upon the age of the student and the type of speech/language disorder the student presented.

Table 37 provides the instruments and procedures utilized by the 16 speech therapists who were interviewed. Only those instruments/procedures utilized by more than 1 speech therapist are included.

Table 37

Instruments/Procedures Utilized by 16 Speech Therapists in Evaluations

Test/Procedure	Frequency	Percent Using Test/ Procedure
Peabody Picture Vocabulary Test - Revised (PPVT-R)	13	81
Clinical Evaluation of Language Functioning (CELF)	11	69
Oral mechanism or oral peripheral exam	11	69
Hearing screening/hearing test	11	69
Illinois Test of Psycholinguistic Abilities (ITPA)	10	63
Gardner Expressive One Word Picture Vocabulary Test	8	50
Goldman-Fristoe Test of Articulation	8	50
Language sample	6	38
Test of Language Development (TOLD)	6	38
Wepman Auditory Discrimination Test	6	38
Detroit Test of Learning Aptitudes	5	31
Fullerton Language Tests for Adolescents	4	25
Templin-Darley Tests of Articulation	4	25
Sequenced Index of Communication Development	4	25
Preschool Language Scale/Preschool Language Assessment Instrument	4	25
Informal Assessments	4	25
Talk Hawaii Battery	4	25
Test of Auditory Comprehension of Language (TACL)	3	19
Photo Articulation Test (PAT)	3	19
The Word Test	3	19

Table 38 displays the instruments and/or procedures the sample of 5 occupational therapists normally used in the course of their evaluations. Only those instruments/procedures identified by 2 or more occupational therapists are listed.

Table 38

Instruments/Procedures Utilized by 5 Occupational Therapists in Evaluations

Test/Procedure	Frequency
Bruininks-Oseretsky Test of Motor Proficiency	5
Beery's Test of Visual Motor Integration	4
Jordan Left-Right Reversal Test	4
Southern California Sensory Integration Test	4
Frostig's Developmental Test of Visual Perception	3
Brigance Inventory of Developmental Skills	3
Motor-Free Visual Perception Test (Colarusso)	3
Upper Extremity Motor Development Test	2
Draw-a-Person	2
Observation of gross motor skills	2
Visual tracking	2
Ayers Clinical	2

Table 39 displays the instruments and/or procedures the sample of 5 physical therapists normally used in the course of their evaluations. Only those instruments/procedures identified by 2 or more physical therapists are listed.

Table 39

Instruments/Procedures Utilized by 5 Physical Therapists in Evaluations

Test/Procedure	Frequency
Lower Extremity Motor Development Test	5
Hughes Basic Gross Motor Assessment	4
Range of Motion testing	4
Peabody Gross-motor Assessment	3
Reflex testing	3
Functional evaluation	3
Brigance Inventory of Developmental Skills	3
Manual muscle testing/muscle examination	2

Both clinical psychologists interviewed normally used self-reports from students to obtain information for their evaluations. The following are other instruments also identified by one or the other of the two clinical psychologists: Wechsler Intelligence Scale for Children-Revised; Walker Behavioral Checklist; Parent data on Louisville Behavioral Checklist; Thematic Apperception Test; Children's Apperception Test; Pears-Harris Self-concept measure; Devereaux Elementary Rating Scale; Personality Inventory for Children; Draw a Person; some kind of drawing-- kinetic, family, etc.; and interviews with parents, client teachers, and social service agencies.

Types of Students Who Require Related Services

Interviewees defined in their own words the type of student requiring the service provided by the interviewee. Responses from the 5 physical therapists included: (a) a global response ("any child who is physically challenged"), (b) references to a physical handicap or delay interfering with ability to function in school, or ability to learn in school, (c) references to non-independence, need for assistance, and abnormal muscle tone, (d) references to a general delay in gross motor skills, or need to improve gross motor or functional skills, and (e) a discrepancy between gross motor skills and intellectual capacity.

Responses from the 5 occupational therapists can be broken down into references to (a) delays or deficits and referred to specifically as developmental, perceptual, visual-perceptual, perceptual/motor, gross motor, fine motor, (b) significance of the delay depending upon the age of the child, severity of the delay or deficit, and/or other unidentified factors, (c) the influence of the delay upon academic performance, learning ability, and/or daily living skills, (d) either a discrepancy between chronological age and level of functioning, or between upper extremity functioning and mental functioning, and (e) the services provided to the child within the classroom, or elsewhere.

Responses from speech therapists made reference to (a) disorders, weaknesses, problems, deficiencies, errors, or deviations such as, (b) cleft palate, stuttering, inarticulation, voice, fluency, general language skills, speech production, processing, the auditory/vocal channel, expression, functional communication, or basic syntax which (c) had to be other than developmental in nature, could not be covered in the classroom, handicapped the child in the classroom, called attention to itself, reduced intelligibility, or were dependent upon the age of the child. Other references were made to (d) age norms, (e) delays in ability, (f) discrepancies between language skills and other abilities, or language and mental age, and (g) specific needs of specific handicapped populations such as the hearing impaired, mentally retarded, and severely multiply handicapped.

The responses from the 2 clinical psychologists referenced either (a) the degree of maladjustment in the child's present setting, or (b) an examination of the child's behavior, thought, emotions, social history, medical history, current medical concerns, and the basic environmental context.

Guidelines/Criteria For Service

Participants were asked in question 11 in the interview, "Are there published or explicitly established guidelines or criteria used for determining the type of service for which you provide." Affirmative answers were provided by 43% of the total sample. Negative answers were provided by 46% of the sample. Three respondents were unsure. Three out of 5 occupational therapists, 2 out of 5 physical therapists, 6 of 16 speech therapists, and both clinical psychologists provided a negative response.

Question 12 ascertained whether the interviewees felt there was a distinction between the concepts of "criteria" and "guidelines" regarding service delivery. Of the 28 respondents, 19 felt there was a difference between "criteria" and "guidelines," 7 indicated there was no difference, 1 individual did not know if there was a difference or not, and 1 said the question was not applicable.

Ten of 15 respondents stated there was "a lot" of flexibility allowed in following such guidlines or criteria, 1 indicated there was a "fair amount" of flexibility, 1 felt there was "not much" flexibility, 1 answered that the amount of flexibility depended on the "type of problem" displayed by the student. Two individuals did not know how much flexibility was allowed.

Interviewees were asked in question 17 to describe conditions under which they might deviate from said criteria or guidelines. Four respondents indicated a need to deviate from guidelines when there appeared to be discrepancies between test scores and their own professional judgement, or the child's performance in the classroom. Three related service professionals stated that guidelines were non-existent or inadequate. Two responded to occasional demands from teachers, parents, and/or administrators. One made occasional recommedations based upon the type and amount of resources and programs available in the school/ classroom.

Recommendations Based Upon Evaluations

All 28 respondents indicated there was a section in their reports to indicate the child they had evaluated did or did not warrant receiving the services for which the child was evaluated. The basis upon which the respondents make those recommendations are listed in Table 40. Individuals provided multiple responses.

Table 40

Basis Upon Which Recommendations Are Made Regarding Service Delivery

Basis For Recommendation	Frequency
Test results	15
Deficit areas/below norms/need of child	11
Informal assessment	7
Age	4
Subjective data/overall impression	3
Student's functional improvement	2
Criteria	2
Doctor's feedback	2
What school or teacher can provide	2
Nature of handicapping condition	2
Clinical judgment	2
Medical history	2

Variability In Recommendations

Interviewees were presented with a hypothetical situation in which all of the examiner's peers tested the same student, obtained the same test results, and observed the same behavior. Interviewees were then asked to estimate how much variability among the examiners there would be in the recommendations forwarded.

Responses were almost evenly divided between "wide" variability (6), "some" variability (5), variability "depends" on the type of problem presented (5), and "little" variability (7). Analysis of responses reveals no significant differences in estimates among types of therapists/ examiners.

Respondents then provided their perceptions of typical factors accounting for such variability. Answers and the frequency with which they were given are provided in Table 41. Only those factors identified by more than 1 interviewee are listed. Nineteen other factors were identified only once.

Table 41

Factors Thought to Account for Variations Among Related Service Professionals Regarding Service Delivery Recommendations

Cause of Variation	Frequency
Educational vs. clinical models of program/ and treatment philosophy	15
Educational background/training of examiner	8
Caseload	8
Professional judgement	7
Therapist preference regarding type of students to serve	3
Bias of examiner	3
Pressure from parents/others	3
Experience of therapist in working with school personnel	2
How student interacted with examiner	2
Strength of therapist/expertise	2
Length of employment as therapist	2
Relationship with information sources	2

Role In Decisions Regarding Placement

Twenty-six of 28 interviewees indicated that they provided input into or had any part in determining the frequency, nature, and duration of the services for which they evaluated students. Their input or role ranged from making the decision themselves to consulting with others about the severity of student need and the priority for service. Their role or input can be placed in four categories. The overwhelming majority of respondents, (n= 13 or 46.4%), indicated they make the decision regarding service delivery. Another 5 saw their role as decision makers, but they specified that this decision could be modified in consultation or negotiation with other interested parties. Five respondents visualized their role as providers of recommendations regarding service delivery. Finally, 3 respondents saw themselves as part of a team which consulted on the priority of services to be provided.

Question 24 asked the respondents to indicate the site of the decision regarding the nature, frequency, and duration of services to be provided. Sixteen of 28 respondents stated that the decision was made as the therapist drafted the report of the evaluation. Three stated that the diagnostic team made the decision during its team meetings. Eight interviewees identified the IEP meeting as the site of that decision. One respondent said the decision was arrived at in the parent conference.

Question 25 obtained information about the process of making that decison. Nine respondents identified the process as a negotiation among interested parties in the service delivery model; 8 said the therapist made the decision alone after reviewing the results of the evaluation; 6 stated that the therapist sometimes made the decision alone and sometimes consulted with others about the most appropriate nature, frequency, and duration of service; 4 reviewed the severity of the case with other individuals, and 1 respondent did not know how the decison was usually made.

Factors Determining Service and Placement

Table 42 displays the factors identified by 2 or more of the 28 respondents as determiners of the frequency of related service provided to students. Interviewees identified an average of 3.3 factors.

Table 42

Factors Thought to Determine the Frequency of Service to Be Provided

Factors	Frequency
Severity of student disability/problem	21
Therapist caseload	9
Age of student	7
Prognosis for recovery	6
Type of deficit	5
Parental input	5
Time therapist has available to provide therapy	5
How often therapist can be at school site	4
Initial evaluation vs. re-evaluation	2
Student motivation	2
Student attention span	2
Activity of student in therapy	2
Assistance provided by parents and teachers	2

Respondents were then requested to identify those factors they felt helped to determine the type or nature of service to be provided (i.e., direct vs. indirect service, or individual vs. group therapy). Therapists identified an average of 2.89 factors determining the nature or type of service to be provided. Table 43 displays only those factors identified by 2 or more interviewees.

Table 43

Factors Thought to Determine Nature or Type of Service

Factor	Frequency
Severity of student problem/disability	14
Prognosis for recovery	6
Problem area/type of deficit	6
Therapist caseload	6
Student age	5
Teacher availability/resources to handle case	4
Previous exposure of student to therapy	3
Parental input	3
What student can benefit from	2
Student's behavior	2
Site of therapy	2
No. of schools therapist serves	2

Finally, respondents identified those factors they felt were influential in determining the duration of service (length of therapy per session). Respondents identified an average of 2.64 factors. Table 44 displays factors identified by 2 or more interviewees.

Table 44

Factors Thought to Determine Duration of Service

Factor	Frequency
Severity of student disability/problem	12
Therapist caseload	10
Time available for therapy	7
There is usually a uniform length per session	6
Attention span	5
Student age	5
School schedule of therapist	3
Type of problem presented	2
Student behavior	2
Site of therapy	2
Student's schedule	2
Needs of student	2
Student endurance	2
Parental input	2

Pressure To Modify Recommendations

Figure 23 provides information on the number of respondents who had ever been pressured or required to modify their recommendations regarding the nature, frequency, and duration of services to be provided.

Respondents were asked in question 30 to indicate how often this had occured for each type of recommendation. Responses for each type of recommendation ranged from "frequently" to "never." Figure 24 displays this information on the frequency with which the respondents had experienced pressure to modify the three basic types of recommendations. Seventeen interviewees had never experienced pressure to modify nature (or type of service) recommendatons. Similar information was obtained regarding frequency and duration (minutes per session) recommendations. Fifteen and 16 respondents, respectively, had never experienced pressure to modify these types of recommendations. Most of those who indicated they had experienced pressure indicated the pressure had been exerted either seldom or occasionally. Very few have experienced regular or frequent pressure to modify their most basic recommendations.

Parents and teachers were the two most frequent sources of pressure to modify recommendations. Thirteen identified parents and 11 identified teachers as the external source of pressure. This question was not applicable for 12 respondents who had earlier indicated they had not experienced pressure to modify their recomendations.

Improvement Of Evaluations And Recommendations

Twenty of the 28 respondents have received inservice training that helped them to improve their evaluations and recommendations. One respondent could not remember if she had received inservice training which helped in this respect, and 1 respondent replied both in the negative and the affirmative. Six respondents had not received inservice training which was helpful in these two areas.

Examples of the topics of inservice included:

1. Improvment of efficiency and accuracy.
2. Evaluation of phonological disorders.
3. Criteria for frequency and duration of service.
4. Assessment of preschool delayed children.
5. Assessment of hearing impaired.
6. Options available for the child in the school system.
7. Time management and case selection.
8. TOTEMS (Training: Occupational Therapy Educational Management in Schools).

Respondents specified a variety of methods and activities that would be most valuable in improving their evaluations and recommendations. Table 45 provides those responses supplied by 2 or more interviewees.

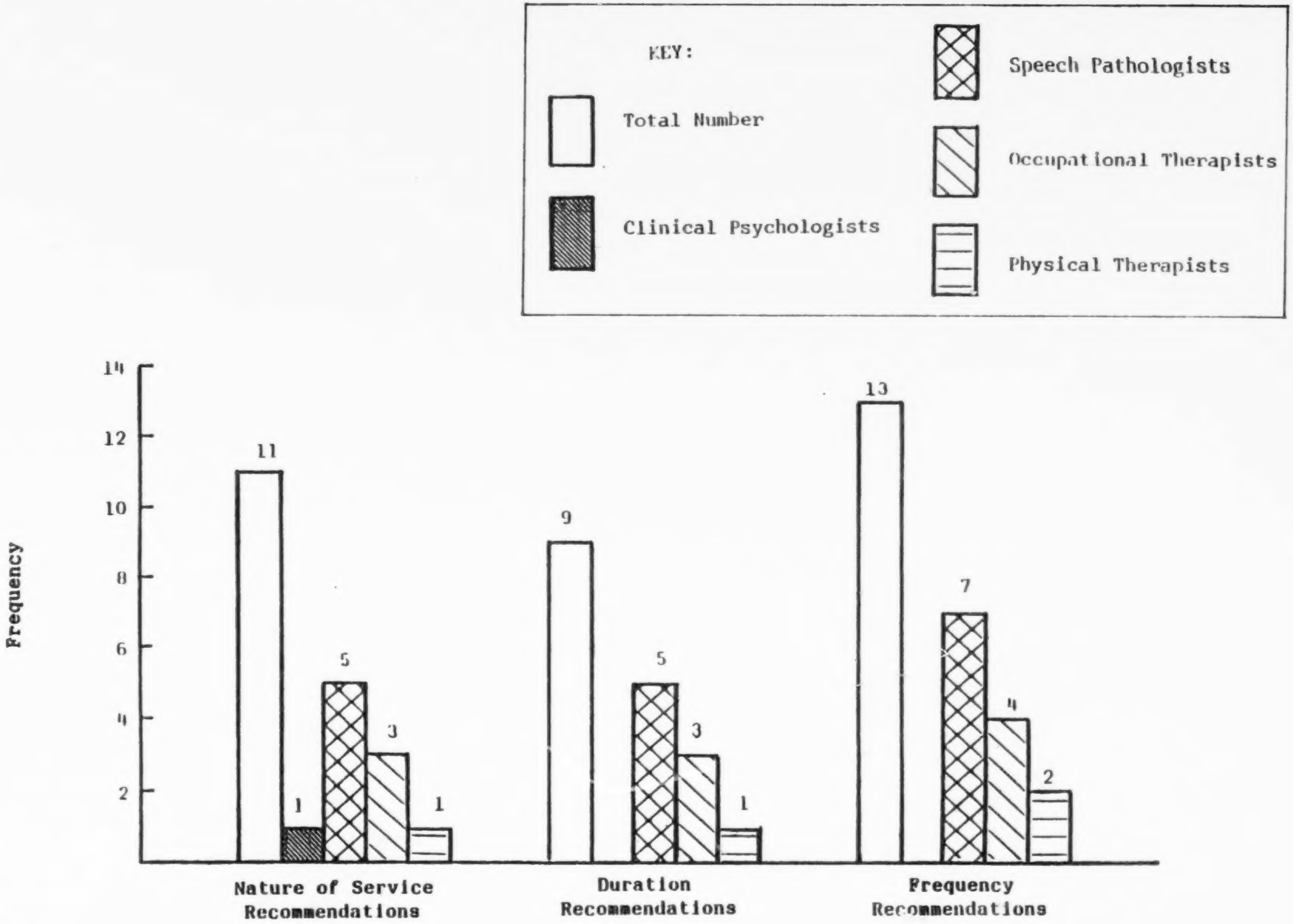

Figure 23. Number of respondents who had ever been pressured or required to modify recommendations.

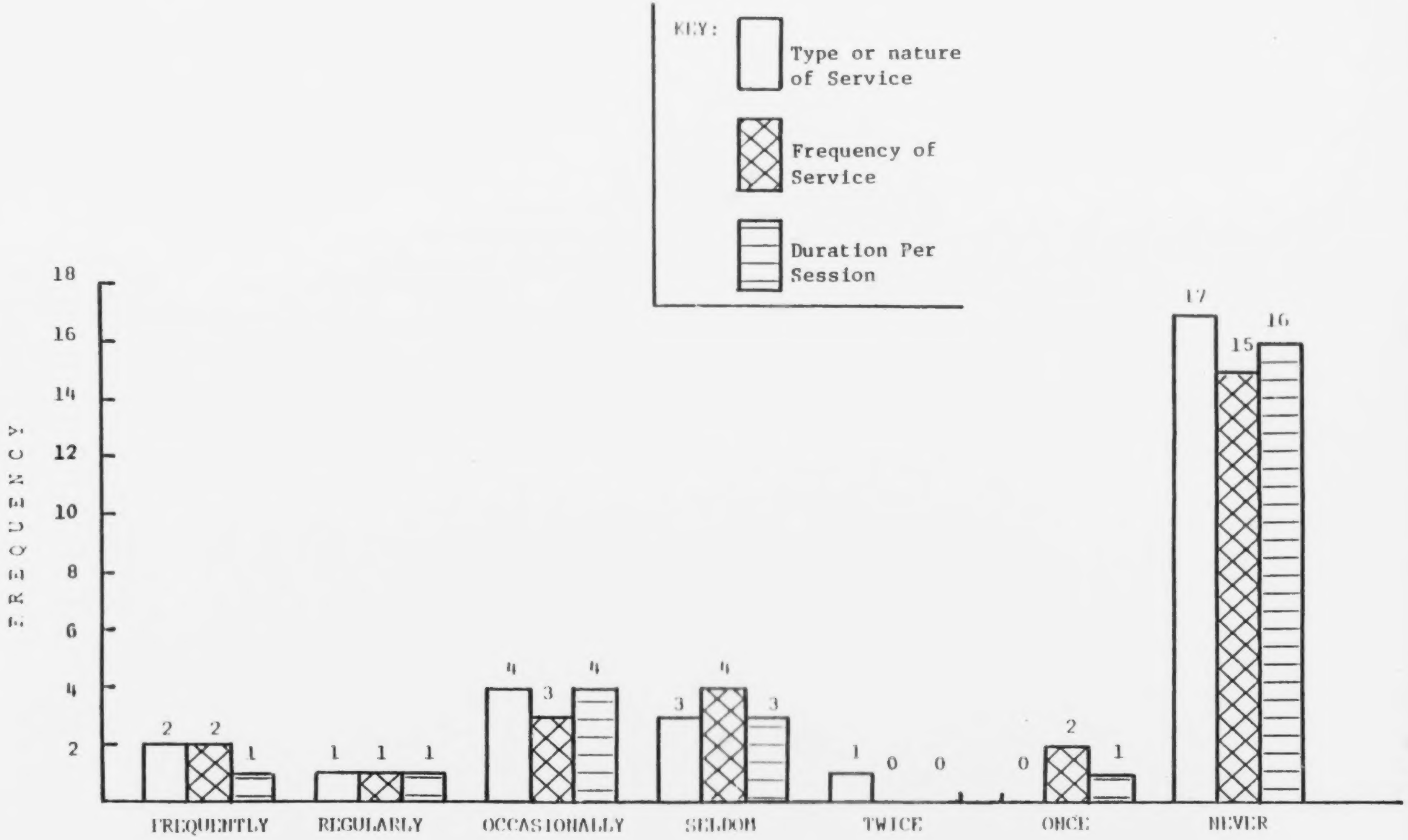

Figure 24. **Frequency of pressure to modify recommendations.**

Table 45

Assistance Thought to Be Most Valuable in Improving Evaluations and Recommendations

Response	Frequency
Continued inservice training/workshops	11
Established statewide uniform guideline	4
Attendance at National conferences (includes money and leave time)	3
Time off to attend University classes, seminars, etc.	2
Additional related service staff	2
Not Applicable	2
Don't need any	2
Can't think of anything	2

In response to question 31, the 28 respondents disclosed activities they could undertake to improve their evaluations and recommendations. Table 46 provides a list of the five most frequently cited activities.

Table 46

Activities Related Service Providers Could Undertake to Improve Evaluations and Recommendations

Activity	Frequency
Read relevant literature/study/staying current	11
Discuss/consult on concerns, ideas, techniques with other therapists	7
Attend conferences/inservices/workshops	7
Spend more time evaluating each student	3
Try new tests	3

The interviewees make a number of different types of recommendations in their reports or during the IEP meetings. Table 47 provides a list of the 13 types of recommendations interviewees most frequently mentioned in the interviews.

Table 47

Types of Recommendations Made by Related Service Providers

Type Of Recommendation	Frequency
Student need for services	26
Nature or type of service to be provided	24
Frequency of service	22
Duration per session	21
Recommendations to teachers	21
Recommendations to parents	19
Recommendations for medical evaluation/follow-up	4
Identification of private/community resources	4
For adaptive equipment needs	3
Site of therapy service	2
For audiological evaluation	2
For other services (unspecified)	2
For further assessment	2

DISCUSSION

Demographic Information

Limited financial resources precluded interviews with a sample of related service providers working in Kauai, Maui, and Hawaii educational districts. The sample of occupational therapists, physical therapists, and speech therapists is sufficiently large to develop reasonable and valid conclusions from the data obtained through the interviews. Because of the small sample of clinical psychologists interviewed, information gathered regarding their evaluations and recommendations should be treated cautiously.

Respondents had been employed an average of almost 8 years in their current occupations and an average of a little over 5 years with their current employers. Therapists interviewed had brought a breadth of experience to the interview, and responses to interview questions reflect that experience.

Ninety-three percent of the respondents anticipated working in the same type of position 1 year from the time of the interview. If respondents proceed with their anticipated plans, just a little over one third of those related service providers currently working can be expected to be in their profession in 5 years, and less than 30% can be expected to be working for the State of Hawaii as related service providers in 1995. The interview was not designed to follow-up on responses. Another survey would be useful in determining factors affecting anticipated movement out of current positions. No attempt was made to compare data on this question with data obtained on workers in other fields. Does this anticipated trend parallel worker "movement" in other fields?

Speech therapists who served as participants identified over 30 different test instruments and procedures to assess student need for speech services. Seven of the over 30 instruments/procedures were used by 50% or more of the therapists. Ten were used by 25% to 36% of the therapists, and almost one half of the instruments were used by less than 20% of the therapists. Such a variety of test instruments is both salutary and cumbersome. The diversity of instruments at hand enables therapists to choose those with which they are most comfortable and which they feel are most relevant or appropriate for use with specific students. This diversity may also contribute to the variability of student eligibility for services both within and between districts. Further information might prove useful in determining whether or not these is a need to develop a more uniform consensus regarding tests and procedures used in assessment and evaluation.

Twenty-seven instruments and procedures were identified by 5 occupational therapists. A core of tests appears to be the standard battery utilized by these therapists. There appears to be a varied use of additional or supplementary tests/procedures. Eleven tests and procedures were named by the 5 physical therapists. Twelve tests or procedures are utilized in various settings by the 2 clinical psychologists.

It should be noted that all four types of related service providers evaluate a diverse student population, who present a myriad problems, in a variety of settings. Examiners bring into the testing situation their own theoretical backgrounds, experiences, and preferences. Two important questions need to be answered: (a) How useful and workable would be the attempt to develop a uniform concensus on instruments and procedures, and (b) does a battery of standardized test instruments, supported by informal assessment and observation, and combined with experienced and thoughtful professional judgement lead to effective and efficient assessment and evaluation procedures.

Over one half of the related service providers have stated that guidelines and/or criteria regarding student need or eligibility for related services do not exist. Forty-three percent affirmed the existence of such guidelines and/or criteria. If the guidelines/criteria already exist, they are not widely understood. The form in which they appear and adherence to them appears to vary both within and between districts.

Even among the related service providers who affirmed the existence of guidelines or criteria for related service, two thirds felt there was much flexibility in following such guidelines. One might question the impact of any existing guidelines and/or criteria for service, when a significant number of therapists assume a great deal of flexibility in following them.

A number of state and district level administrators had expressed concern over variability in recommendations regarding the nature, frequency, and duration of service from district to district, school to school, and therapist to therapist. It has been asserted that a student evaluated to determine service needs might receive a recommendation for service from one examiner, but not receive that recommendation from another. Sixteen of 23 respondents said there would be "some" to "wide" variability in recommendations if therapists would hypothetically evaluate the same student, and all obtain the same results.

Further investigation of the actual variance in recommendations across the state appears to be warranted. Service models, treatment philosophy of the examiners, size of therapist caseloads, and differences in "professional judgement" all influence the nature and extent of recommendation variability. The exact degree of influence deserves further study.

Who makes the decisions regarding service delivery? Is it the therapist who relies upon data that has been collected? Is the decision a type of informal discussion among therapists/examiners? Is the decision a group agreement on service needs that emerges from consultation in a formal (IEP) meeting?

According to PL 94-142, decisions regarding service delivery are made at the meeting where the Individualized Educational Program (IEP) is developed. There appear to be at least two reasons for this disparity between principles or standards of PL 94-142 and the perception of the therapist's role in the decision making process. The first is that the examiner provides a series of recommendations regarding service delivery. These are often accepted without modification at the IEP conference. As this occurs over time, perhaps the distinction between the recommendation as a recommendation and the decision adopting that recommendation begins to blur. The second is an inexact comprehension of some requirements of the law regarding placement decisions. This could be rectified through a series of inservice training modules.

As might be expected, the severity of a student's disability or problem was the most frequently cited factor determining not only the type of service to be provided, but also its frequency and duration per therapeutic session. The most frequently cited factor external to the student was the caseload size of the therapist providing the service. A therapist might wish to serve a student 3 or 4 times per week, but the large size of the caseload may render it impossible to find the time to provide therapy with such frequency.

Pressure to modify recommendations is not a frequent occurence that respondents have had to face. More than one half of the therapists had never experienced any pressure to modify recommendations. Continued inservice training and workshops are felt to be the most valuable type of assistance respondents could receive in assisting them to improve their evaluations and recommendations. Studying, "staying current" and reading relevant literature were cited as individual efforts to be made to improve evaluations and recommendations. The search for current and relevant knowledge about one's field appears to be the motivation behind both examples.

Further investigation into the nature, process, and outcomes of evaluations and recommendations is warranted. Information from these interviews should prove useful to related service providers and to decision makers at the state and district level.

X. RELATED SERVICE PROVIDER PERCEPTIONS OF CONSULTATION SERVICES PROVIDED TO SPECIAL EDUCATION TEACHERS

INTRODUCTION

With an increased demand for related services in the public schools, related service professionals are seeking viable alternatives and/or supplements to direct therapeutic services. Consultation is one such alternative. It has been maintained that some of these children may be more appropriately and effectively served through the consultation model than through the direct service model (Frasinelli, Superior & Meyers, 1983).

Very little is currently known about the demands that consultation places upon both the related service professional and the teacher to whom consultation is provided. In addition, information is lacking on the factors that facilitate effective consultation. A dispassionate examination of the current professional preparation curriculum reveals that training is very seldom provided to either the related service provider or the teacher to optimize the consultation process.

Often teachers and related service providers assume opposing perspectives on the consultation model of service delivery. Related service providers may push for an increased consultation caseload while special education teachers may feel that the more direct services the child receives the more the child will benefit from special education. Teachers may also feel ill-equiped to provide basic therapeutic or remedial techniques in the classroom.

The purpose of the present study was to analyze and describe from the related service provider's perspective the consultation services that these professionals provide to special education teachers in the Hawaii public school system. Results should assist professionals in both the educational and health service communities in Hawaii to acquire further information about (a) the perceived effectiveness and benefit(s) of consultation, (b) the amount of training needed to assist related service providers to implement the model more effectively, (c) the usefulness of a variety of activities which may occur during consultation, (d) the types of children who might benefit most from consultation services, and (e) methods to improve the consultation model.

METHOD

Survey Participants

In December 1985, Project staff disseminated a 19-item survey questionnaire to 94 of 159 related service providers providing therapeutic services in the State of Hawaii. These 94 recipients represented almost 60% of those professionals who were believed to provide consultation services to teachers and students in the public school system. The survey was sent to (a) 100% of the occupational therapists (n=21) and physical therapists (n=12) employed at that time in the School Health Support

Services Section of the Department of Health, (b) 66% of the clinical psychologists (4 out of 6) and 90% of the psychiatric social workers (17 out of 19) employed in Children's Teams of the Mental Health Division of the Department of Health, and (c) 40% of the speech therapists (40 out of 101) providing therapeutic services in the Department of Education. Sixty-four of the 94 recipients responded to the survey. Table 48 illustrates the breakdown of respondents by profession. Table 49 displays a district breakdown of surveys disseminated and received. Respondents are considered to be representative of the related service professionals providing service to the public school special education population in Hawaii.

The length of employment in current occupation for related service provider respondents ranged from 5 months to 20 years, the mean (average) being 6 years. Eight respondents had been employed in their current occupation less than 1 year (12.5%), 10 had been employed between 1 and 3 years (15.6%), 28 had been employed between 4 and 7 years (43.8%), 11 had been employed between 8 and 10 years (17.2%), and 7 had been employed more than 10 years (10.9%).

Survey

The survey instrument included items related to frequency and duration of consultation service, ratings of satisfaction with and effectiveness of consultation with teachers, the extent of preservice and inservice training, ratings of helpfulness of specific activities that occur during consultation, identification of types of students which typically benefit most and least from consultation, and identified strategies to improve consultation services. A copy of the survey instrument is included in Appendix F.

RESULTS

Student Caseload

Participants were asked to indicate the number of students on their caseloads currently served through consultation. Caseload size ranged from 0 students to 65 students and averaged almost 16 students. The majority of respondents had a consultation caseload size of less than 10 students (53.1%, n=33). Table 50 depicts the consultation caseload size by profession.

Teachers Receiving Consultation

Most respondents indicated they provided consultation to less than 5 teachers during an average month (n=33, 55.0%), the mean number of teachers reporter per respondent was almost 7. Twenty-eight percent consulted with 6 to 10 teachers (n=18), while 17% consulted with more than 10 teachers in an average month. Table 51 displays the average and range of the number of teachers who received consultation, broken down by related service profession. Psychiatric social workers reported that they provided consultation services to the largest number of teachers (mean=17), while speech therapists reported providing consultation to the smallest number of teachers (mean=3).

Table 48

Related Service Provider Responses to Consultation Survey, by Position

Position	# of Surveys Disseminated	# of Surveys Returned	% Response Rate	% of Total Response
Speech Therapist	40	24	60.0	37.5
Occupational Therapist	21	19	90.5	29.7
Physical Therapist	12	9	75.0	14.1
Clinical Psychologist	4	2	50.0	3.1
Psychiatric Social Worker	17	10	58.8	15.6
TOTAL	94	64	68.1	100.0

Table 49

Related Service Provider Responses to Consultation Survey, by District

District	# of Surveys Disseminated	# of Surveys Returned	% Response Rate	% of Total Response
Central	18	8	44.4	12.5
Hawaii	9	8	88.9	12.5
Honolulu	26	19	73.1	29.7
Kauai	4	1	25.0	1.6
Leeward	14	12	85.7	18.8
Maui	7	4	57.1	6.3
Windward	16	12	75.0	18.8
TOTAL	94	64	68.1	100.0

Table 50

Students on Caseload Served Through Consultation Services

Position	f	Mean	Range
Speech Therapist	24	3.3	0-15
Occupational Therapist	19	17.4	1-56
Physical Therapist	9	28.1	0-49
Clinical Psychologist	2	49.0	42-56
Psychiatric Social Worker	10	25.8	3-65
TOTAL	64	15.7	0-65

Table 51

Number of Consultation Services Provided to Teachers in an Average Month

Position	f	Mean	Range
Speech Therapist	24	3.1	0-8
Occupational Therapist	19	6.8	2-15
Physical Therapist	9	7.0	1-11
Clinical Psychologist	2	6.5	4-9
Psychiatric Social Worker	9	17.6	4-50
TOTAL	63	6.9	0-50

Understanding of Consultation

Participants were asked if they had an understanding of the nature and purpose of consultation services they provide to teachers. A majority (95.2%, n=60) of the respondents provided an affirmative answer, 3 answered in the negative (4.8%), and 1 did not respond. All 3 respondents who answered in the negative were speech therapists. Next, participants were asked if they felt that teachers understood the nature and purpose of consultation. Seventy-five percent responded affirmatively (n=43), while 25% responded negatively (n=14). Seven did not respond. Table 52 provides the percentage of affirmative and negative answers for these two questions, broken down by profession.

Duration of Consultation Services

The average length of time spent in each consultation session with teachers ranged from 5 minutes to 90 minutes with a mean of 29 minutes. Table 53 provides the means and ranges for the length of time spent in each consultation session broken down by profession of related service provider.

Purpose, Requirements, Appropriateness, and Benefits

In question 7 of the survey, participants were given a series of statements regarding the purpose, requirements, appropriateness, and benefits of consultation services and were asked the degree to which they agreed or disagreed with those statements. Table 54 displays those statements and the percentage of participants who strongly agreed, agreed, disagreed, or strongly disagreed with each statement. One hundred percent of the respondents agreed or strongly agreed with the statement that "consultative services employed by related service professionals provide therapeutic services indirectly to the student through the teacher." One hundred percent of the respondents also agreed or strongly agreed with the statements that these services "require a spirit of collaboration between the teacher and the therapist," and "require a teacher to be an active participant in the decision-making process."

Satisfaction with Consultation Services

Participants were asked to rate on a scale of 1 to 8 (1 being very dissatisfied, 8 being very satisfied) the degree to which they were satisfied with the consultation services they provide to teachers. Fifty participants (83.3%) responded that they were either satisfied or very satisfied with their consultation services to teachers. Participants were also asked to rate the effectiveness of these services. Forty-eight respondents (80.0%) felt that their consultation services were effective or very effective.

Additionally, participants were requested to rate the degree to which they felt parents and teachers were satisfied with the consultation model used by members of their profession.

Table 52

Related Service Professionals' Understanding of Nature and Purpose of Consultation (% of position)

	Therapist Understands			Teacher Understands		
Position	f	Yes	No	f	Yes	No
Speech Therapist	23	87.0%	13.0%	23	69.6%	30.4%
Occupational Therapist	19	100.0%	0.0%	16	75.0%	25.0%
Physical Therapist	9	100.0%	0.0%	7	85.7%	14.3%
Clinical Psychologist	2	100.0%	0.0%	2	100.0%	0.0%
Psychiatric Social Worker	10	100.0%	0.0%	9	77.8%	22.2%
TOTAL	63	95.2%	4.8%	57	75.4%	24.6%

Table 53

Related Service Providers Report of Duration of Consultation Sessions

Position	f	Mean (minutes)	Range
Speech Therapist	20	16.2	5-37
Occupational Therapist	19	34.8	10-75
Physical Therapist	9	29.0	7-60
Clinical Psychologist	2	30.0	30-30
Psychiatric Social Worker	10	43.9	17-90
TOTAL	60	29.1	5-90

Table 54

Related Service Provider Responses to Statements Regarding Consultation Services

Consultative Services Employed by Related Service Professionals:	f	Strongly Agree	Agree	Disagree	Strongly Disagree
Provide therapeutic services indirectly to the student through the teacher	64	40.6%	59.4%	0.0%	0.0%
Require a spirit of collaboration between the teacher and therapist	64	85.9%	14.1%	0.0%	0.0%
Require a teacher to be an active participant in the decision-making process	64	62.5%	37.5%	0.0%	0.0%
Require data collection and analysis as an essential part of the process of consultation	63	41.3%	44.4%	14.3%	0.0%
Involve the consultant as a "expert" who tells the teacher what to do	62	3.2%	33.9%	56.5%	6.5%
Is an appropriate service model for related services	61	23.0%	68.9%	6.6%	1.6%
Are often a waste of teacher/ therapist time	60	0.0%	15.0%	60.0%	25.0%
Are often as effective as direct services	59	16.9%	50.8%	27.1%	5.1%
Are often of benefit to students	64	29.7%	62.5%	7.8%	0.0%
Are often of benefit to teachers	64	26.6%	65.6%	7.8%	0.0%
Are often of benefit to therapists	64	21.9%	68.8%	9.4%	0.0%

Rating of Teachers' Abilities to Carry Through or Benefit from Consultation

Finally, participants were asked to give their perception of the abilities of teachers to whom they provided consultation to carry through with ideas and suggestions or to benefit from consultation. In these ratings (1 being below average, 8 being excellent), an overwhelming majority of the participants (n=55, 91.8%) rated the teachers' abilities at an average, above average, or excellent level.

Table 55 lists these questions regarding satisfaction with and perceived effectiveness of the consultation model and teachers' abilities to carry through with suggestions or benefit from consultation services. The table also provides percentages of the degree of satisfaction or dissatisfaction broken down by related service provider profession.

Preservice Training

Less than 30% of the respondents took college courses which prepared them to consult with teachers. Figure 25 illustrates the breakdown by profession of those who have taken college courses which prepared participants to provide consultation services.

Inservice Training

Fifty-one percent of the 51 respondents to question 14 have received inservice training on consultation from the Department of Health (DOH). Figure 26 displays the results of question 14.

The Department of Education (DOE) provided inservice training on consultation to 15 out of 51 respondents (25.0%). Figure 27 provides the number and percentage of related service professionals receiving such training from the DOE.

Forty respondents (65.6%) felt they needed additional training to provide more effective consultation services. Figure 28 illustrates the breakdown of affirmative and negative responses by profession.

Helpfulness of Specific Consultation Activities

Participants were requested to rate the helpfulness of activities that occur during consultation using a scale of 1 to 8 with 8 being extremely helpful and 1 being not helpful. A majority of respondents (64.1%, n=41) indicated that the "provision to the teacher of information that is specifically requested" was extremely helpful. This activity had the highest overall rating of all activities listed (overall mean=7.3). "Demonstration of appropriate therapeutic or remedial techniques to be used in the classroom" and "providing recommendations to teachers to remediate a specific problem" were the next two highest rated activities (mean=6.8).

The lowest rated activiy (mean=5.4) was "discussion of appropriate methods used for data collection to analyze a student's problem or to assess effectiveness of activites/methods used to remediate problems". Five respondents felt this was not a helpful activity. Table 56 provides ratings of all activities.

Table 55

Related Service Providers Perceptions of Satisfaction/Effectiveness of Consultation Services

Question	Position	f				
			% very satisfied	% satisfied	% dissatisfied	% very dissatisfied
Generally, how satisfied are you with the consultation services you provide to teachers?	Speech Therapist		0.0	61.9	33.3	4.8
	Occupational Therapist		10.5	79.0	10.5	0.0
	Physical Therapist		25.0	75.0	0.0	0.0
	Clinical Psychologist		100.0	0.0	0.0	0.0
	Psychiatric Social Worker		50.0	50.0	0.0	0.0
	TOTAL	60	18.4	65.0	15.0	1.7
Generally, how satisfied are parents with the consultation model used by members of your profession?	Speech Therapist		6.3	68.8	18.8	6.3
	Occupational Therapist		0.0	77.7	16.7	5.6
	Physical Therapist		0.0	100.0	0.0	0.0
	Clinical Psychologist		50.0	50.0	0.0	0.0
	Psychiatric Social Worker		25.0	75.0	0.0	0.0
	TOTAL	52	7.7	76.9	11.5	3.8
Generally, how satisfied are teachers with the consultation model used by members of your profession?	Speech Therapist		5.3	63.2	26.3	5.3
	Occupational Therapist		11.1	72.3	16.7	5.6
	Physical Therapist		0.0	100.0	0.0	0.0
	Clinical Psychologist		0.0	100.0	0.0	0.0
	Psychiatric Social Worker		22.2	66.6	11.1	0.0
	TOTAL	57	8.8	73.7	15.8	1.8
			% very effective	% effective	% ineffective	% very ineffective
Generally, how effective are the consultation services you provide to teachers?	Speech Therapist		0.0	61.9	38.1	0.0
	Occupational Therapist		10.5	68.4	21.1	0.0
	Physical Therapist		0.0	100.0	0.0	0.0
	Clinical Psychologist		50.0	50.0	0.0	0.0
	Psychiatric Social Worker		40.0	60.0	0.0	0.0
	TOTAL	60	11.7	68.3	20.0	0.0
			% excellent	% above average	% average	% below average
What is your perception of the ability of teachers to whom you provide consultation to carry through with ideas and suggestions or to benefit from consultation?	Speech Therapist		8.6	60.9	26.0	4.3
	Occupational Therapist		21.1	42.2	26.4	10.5
	Physical Therapist		0.0	37.5	50.0	12.5
	Clinical Psychologist		0.0	0.0	100.0	0.0
	Psychiatric Social Worker		0.0	11.1	66.6	22.2
	TOTAL	61	9.8	42.6	37.7	9.8

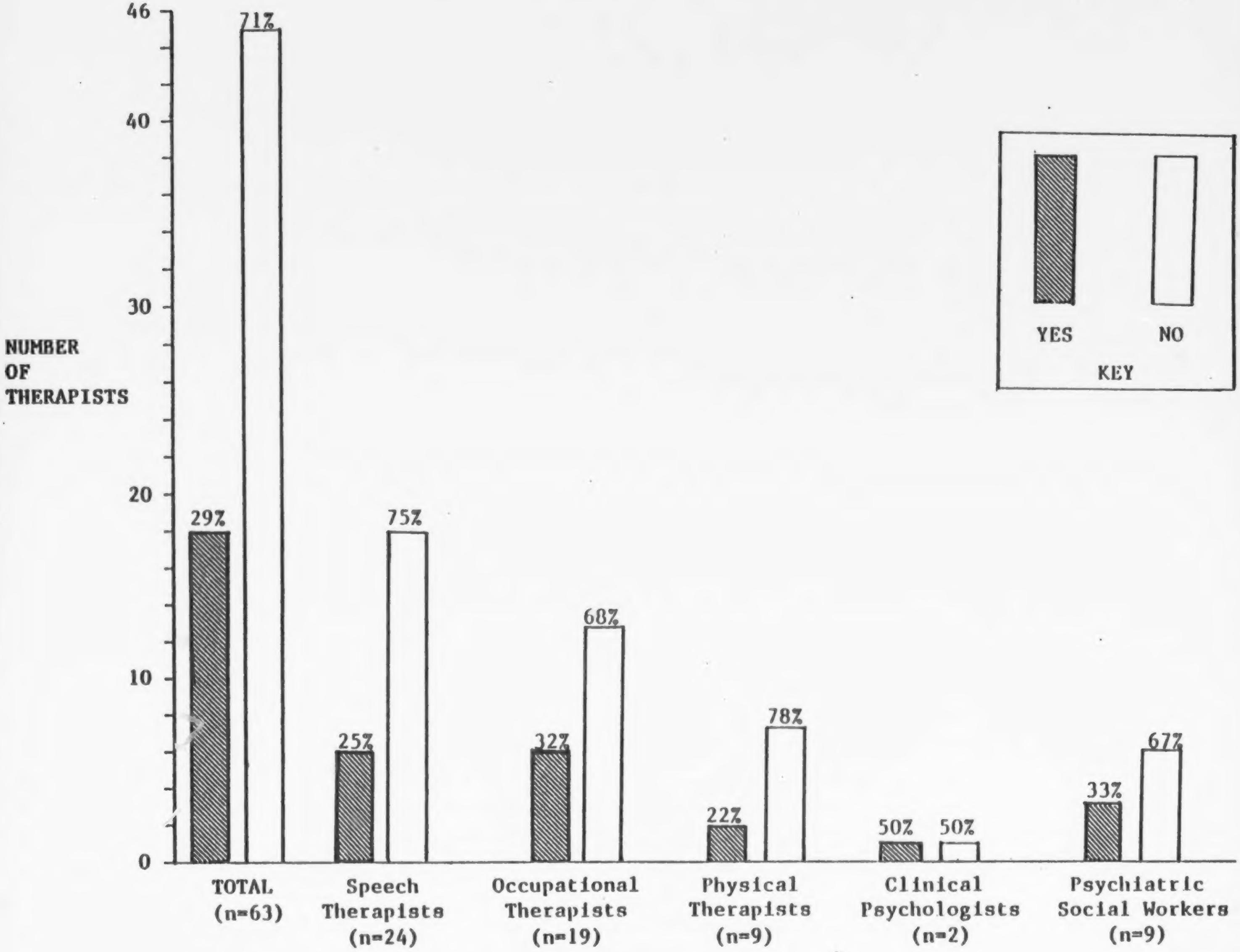

Figure 25. Therapists who have taken college courses which prepared them to provide consultation services.

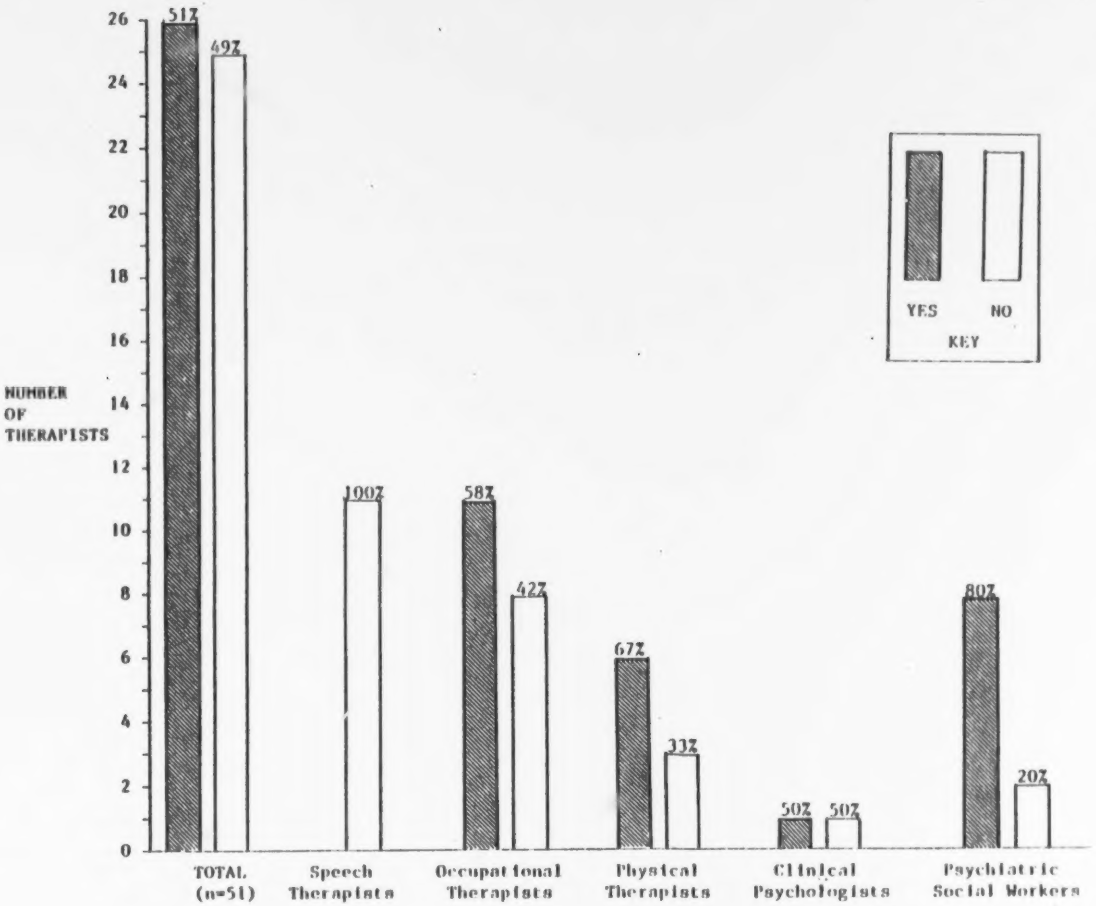

Figure 26. Therapists who have received inservice training on consultation from the Department of Health.

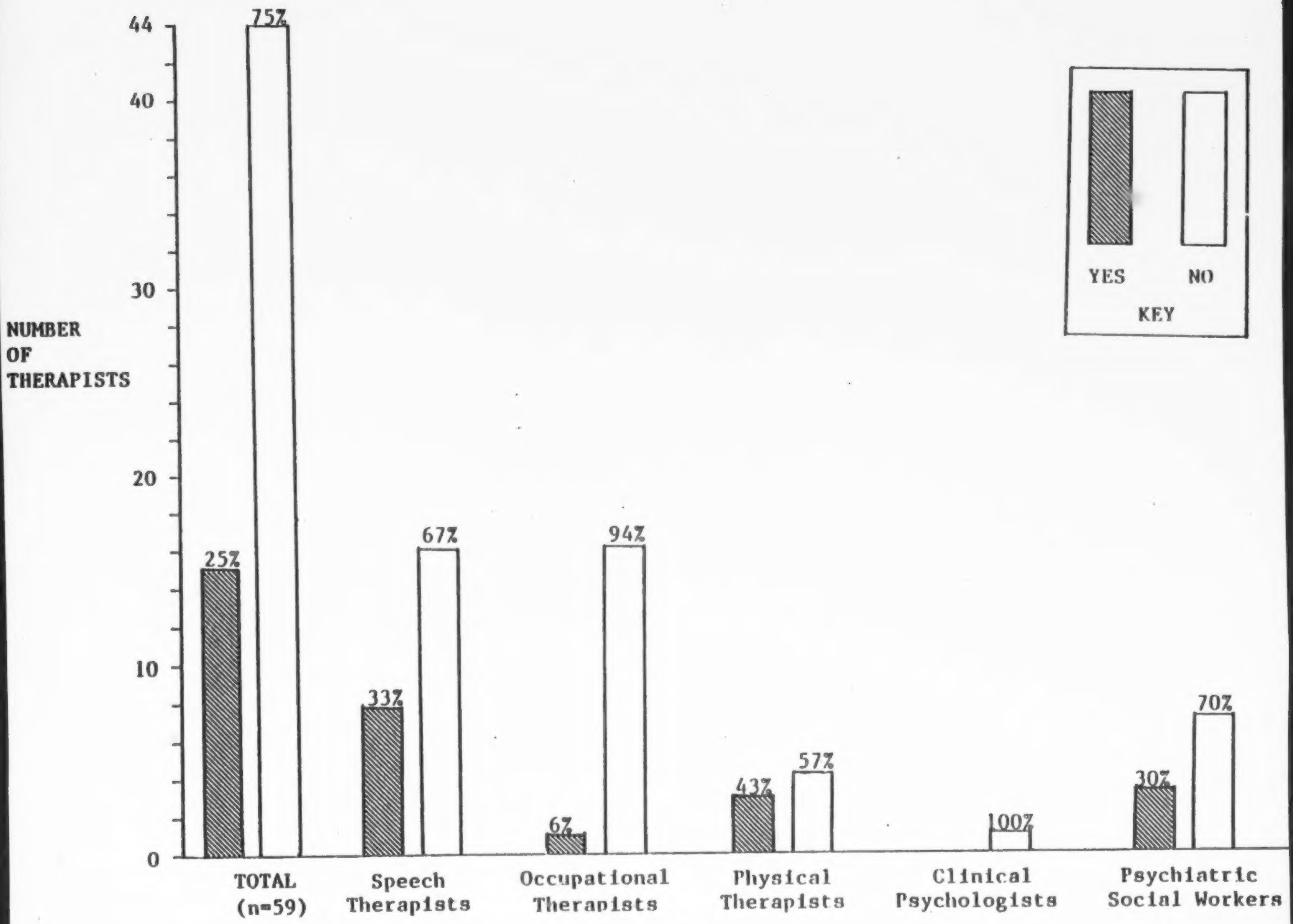

Figure 27. Therapists who have received inservice training on consultation from the Department of Education.

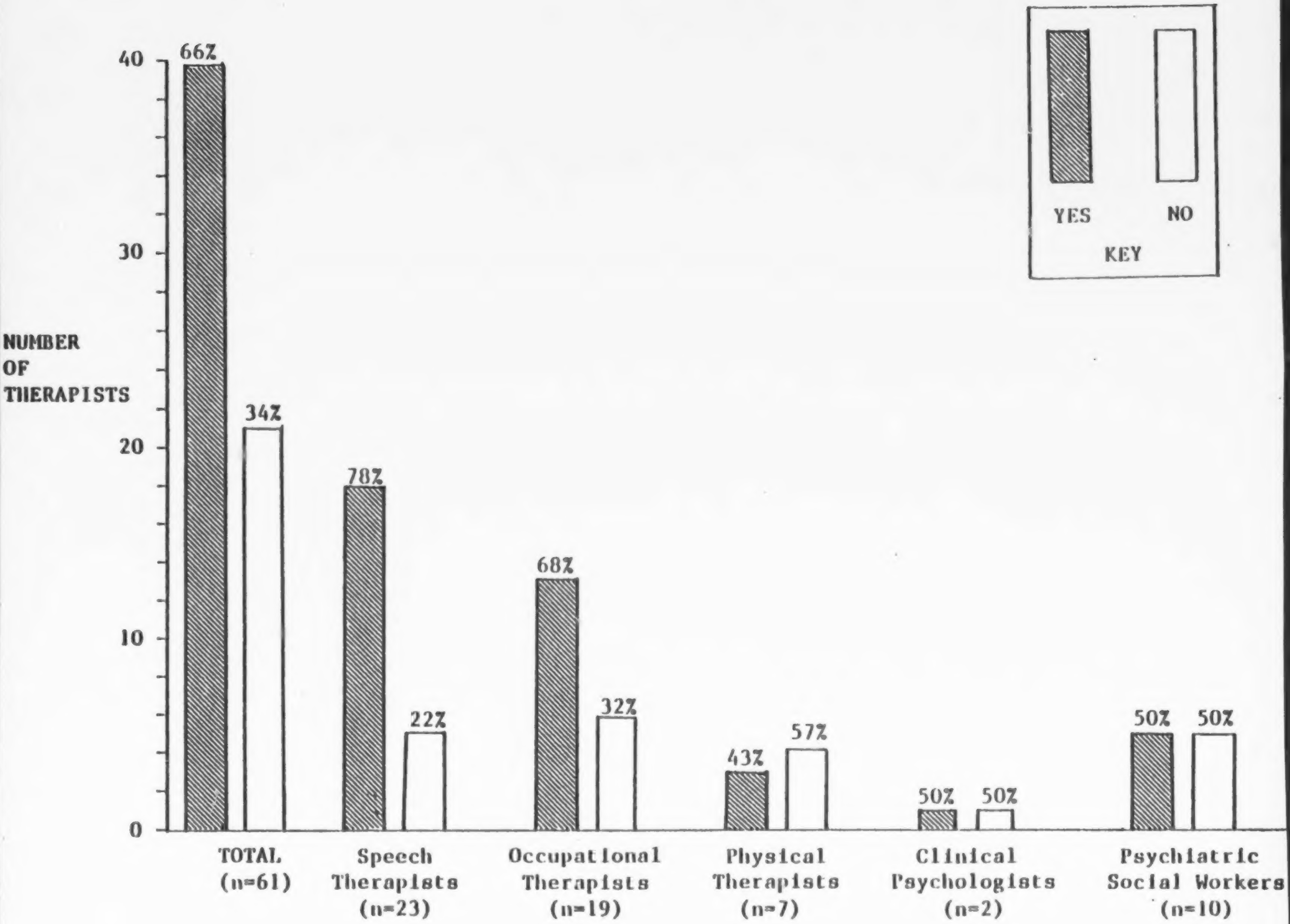

Figure 28. Therapists who feel additional training is needed to provide more effective consultation services.

Table 56

Related Service Provider Ratings of Helpfulness of Specific Consultation Activities

Activity	f	Overall Mean	Speech Therapist	Occupational Therapist	Physical Therapist	Clinical Psychologist	Psychiatric Social Worker
Provide information that is specifically requested	64	7.3	6.8	7.8	7.9	7.5	7.1
Provide information/material not specifically requested	63	5.9	5.8	6.8	5.6	6.0	5.8
Provide diagnosis/analysis of a specific student's problems	64	6.2	6.2	6.2	5.7	6.5	6.6
Provide recommendations to teachers	64	6.8	6.3	7.2	6.9	6.5	7.2
Recommend ways to improve the learning environment of the classroom	58	5.7	4.9	6.1	5.3	6.0	6.8
Discussion on appropriate methods of data collection	52	5.4	5.1	5.7	4.6	5.5	6.0
Discussion of appropriate materials that can be used in the classroom	58	5.6	5.1	6.3	4.8	6.0	5.4
Explanation of referral criteria to receive services provided	59	6.2	6.3	6.2	6.0	4.5	6.7
Demonstration of appropriate therapeutic/remedial techniques	61	6.8	6.4	7.4	7.3	7.5	6.2
Teacher provides ideas/suggestions on material/techniques/activities	59	6.4	6.0	6.9	6.5	7.0	6.4
Establishment of an oral or written agreement	52	5.7	4.5	6.3	6.1	4.0	6.5

Note. Mean ratings based on a scale of 1 to 8.

Students Benefiting Most

Respondents were asked in an open-ended question to identify the types of children that benefit most from the consultation services they provide. Table 57 displays those responses.

Students Benefiting Least

Respondents were also asked in an open-ended question to identify the types of children that benefit least from consultation services they provide. Table 58 displays those responses.

Suggestions for Improvement

Finally, respondents were asked to provide suggestions for improvement of consultation services. Table 59 displays those suggestions. The three most frequently cited suggestions were (a) understanding the process/roles of consultation, (b) improving time schedules, and (c) inservice for special education teachers regarding the nature of therapy.

DISCUSSION

According to Meyers, Parsons, and Martin (1979), consultation is a technique that has the following characteristics: (a) it is a helping or problem-solving process, (b) it occurs between a professional help-giver and a help-seeker who has the responsibility for the welfare of another person, (c) it is a voluntary relationship, (d) the help-giver and help-seeker share in solving the problem, (e) the goal is to help solve a current work problem of the help-seeker, and (f) the help-seeker profits from the relationship in such a way that future problems may be handled more sensitively and skillfully. Consultation is a service delivery model that an increasing number of related service providers consider in their efforts to provide quality services to special education students. The current study has obtained information on related service provider perceptions of the consultation services they provide to students indirectly through teachers.

Results were obtained from 64 surveys completed by related service providers in all seven educational districts in Hawaii. Participation in the survey was relatively high as reflected in the 68% response rate. The response rate for occupational therapists was particularly high (90.5%).

The average consultation caseload size of the sample was almost 16 students, yet there was wide variability both across professions and within professions in the size of the caseload. Speech therapists reported an average consultation caseload of 3 students yet the 2 clinical psychologists in the survey reported an average of 49 students served through consultation. Is variability of caseload size a function of the type of service provided, the perception of appropriateness of consultation as a service model, the types of students the related service provider normally encounters, or the size of the provider's overall caseload? Or is it due to other factors? Further investigation into the factors affecting consultation caseload size appears warrented. What accounts for one

Table 57

Types of Students That Therapists Indicate Benefit Most From Consultation

Type of Student	Sp. Ther.	Occ. Ther.	Phys. Ther.	Clin. Psych.	Psych. Soc.Wk.
Specific Handicapping Conditions					
Learning Impaired	1	4			
Speech Impaired	1				
Severely Multiply Handicapped	1	9	4		
Hearing Impaired	1				
Other Health Impaired		3	1		
Profoundly Mentally Retarded		1			
Moderately Mentally Retarded	1	6			
Mildly Mentally Retarded	1	2			
Learning Disabled		3			
Emotionally Handicapped			2		1
Specific Problems/Impairments					
Speech problems developmental	2				
Has articulation problems	4				
Has voice stuttering problems	1				
Has behavioral problems		3		1	1
Has Cerebral Palsy		1			
Has Muscular Dystrophy		1			
Withdrawn/depressed				1	1
Has family problems					1
Has peer relationship difficulties					1
Has poor self-esteem					1
Hyperactive					1
Aggressive					1
Disruptive					1
Generic Classifications					
Understands/applies recommendations	1				
Needs to practice skills; monitoring	4		1		
Preschool	1		1		
Has mild problems	9	1			
Kindergarten-third grade students	1				
Received direct services for years	1				
Shows minimal progress	1				
Benefit from daily input	1		1		
Carryover stages of therapy	3				
Needs long-term remediation	1				
Needs repetition/structure		2	1		
Has teachers who follow through		2	2		1
Intermediate school aged		1			
Progress is slow				1	1
All students					1
Displays poor academic progress					1
Displays poor motivation					1
Contextual Factors					
Needs are similar to others in class	1				
Soon to be dismissed from the program	3	1			
ISC classrooms/self-contained programs	1	3	1		
Activities are integrated		1	1		

Table 58

Types of Students That Therapists Indicate Benefit Least From Consultation

Type of Student	Sp. Ther.	Occ. Ther.	Phys. Ther.	Clin. Psych.	Psych. Soc.Wk.
Specific Handicapping Conditions					
Severely Multiply Handicapped	1				
Learning Disabled	1	7	3		
Other Health Impaired		4	2		
Mildly Mentally Retarded		2			
Moderately Mentally Retarded		1			
Specified Problems/Impairments					
Mild hearing loss	1				
Moderate to severe sp./lang. disorders	2				
Has multiple problems	1				
Multiple articulation errors	1	1			
Has articulation problems	2				
Has visual perception problems		1			
Has behavioral/emotional problems		1			
Has sensory integrative problems		1			
Has motor problems		2			
Needs adaptive equipment		1			
Developmentally delayed		1			
Older Cerebral Palsy			1		
Needs residential treatment					1
Alienated					1
Has drug problems					1
Generic Classifications					
Needs repetitive drills/reinforcement	1				
Needs individualized sessions	4				
Short term cases	1				
Mild to moderate severity	1				
Needs intensive services	2				
High school aged	1				
Require on-going direct services		3			
Has frequently changing needs		1	1		
Preschool		1			
No students		2		1	
Normal, well-adjusted					2
Contextual Factors					
Has teachers who don't follow through	1				
Resource or intermediate self-contained		3	1		
No carryover by staff			1		
No continuity with services				1	
Parents not involved					2

Table 59

Related Service Provider Recommendations for Improvement of Consultation Services

Recommendations	Sp. Ther.	Occ. Ther.	Phys. Ther.	Clin. Psych.	Psych. Soc.Wk.
Inservice for special education teachers regarding the nature of therapy	2	3	1	1	1
Joint workshops	2	2			
Written agreements	1	1			
Improved time schedules	2	3	4	1	1
Teachers more receptive/willing to listen	1				2
Further training for all parties	1				
Reduced caseloads	2	1			
Decreased paperwork	1				
Set guidelines	2	1			
Resources made available	1				1
Teachers & therapists more supportive of each other	1	2	1		2
Field test any existing consultation model	1				
Convince teachers that the model works	1				
Teachers attend IEP	1				
Regular meeting with teachers	1				
Therapists take responsibility to make contacts	1				
Understanding of the process/roles		10	1	1	2
Valid attempts to follow through		1	1		
Consistency in providing services		1			
Therapists have more control		1			
Clarification/identification of objectives		1			
Teacher educated about various diagnosis			1		
Better documentation			1		
More administrative support				1	
Parents invited to case conferences				1	1
Input from other professionals					1

occupational therapist serving 1 student through consultation and another occupational therapist serving 56 students through consultation?

In an average month, speech therapists reportedly provide consultation to fewer teachers than do other related service providers. Psychiatric social workers, on the other hand, reportedly consult with an average of almost 18 teachers per month. Although the psychiatric social workers typically report smaller consultation caseloads than clinical psychologists, they consult with a greater number of teachers than do those psychologists in the survey. Again, investigation appears to be warrented to determine factors affecting variability in the number of teachers receiving consultation. Wide variations in the number of teachers reported to be receiving consultation services are noticed both across and within professions.

Related service providers in the sample almost unanimously (95%) felt that they understood the nature and purpose of consultation. The majority (75%) also felt that those teachers with whom they consulted also possessed an understanding of the nature and purpose of consultation. However, a greater percentage of speech therapists (30%) than other related service providers were critical of the understanding that teachers had of the consultation model. Although a majority of all related service providers indicated an understanding of the nature and purpose of consultation, two thirds of the respondents reported a need for additional training to provide more effective consultation services.

Speech therapists typically reported less time (mean=16 minutes) in consultation sessions than other related service providers. Occupational therapists, physical therapists, and clinical psychologists reported an average 30 minute duration of each consultation session. Psychiatric social workers indicated an even larger average duration (almost 44 minutes). Investigation into factors affecting variability of length of consultation services is warrented.

Consistent with assertions in the professional literature (Frassinelli, Superior, & Meyers, 1983) was the attitude of all respondents that consultation services require a spirit of collaboration between the teacher and the therapist and that such services require the teacher to be an active participant in the decision-making process. The collaborative model of consultation states that for consultation services to be effective, teachers must be "equal participants" with the therapist and that decisions regarding services should be "joint" decisions of the therapist and the teacher.

An overwhelming majority (92%) of respondents perceived consultation to be an appropriate service model. A somewhat smaller percentage (68%) consider consultation to be as effective as direct services. However, 90% of the respondents agree that consultation benefits students, teachers, and therapists.

Most therapists were generally satisfied with the consultation services they provided to teachers and indicated these services were either effective or very effective. Over one third of the speech therapists in the survey, however, evidenced dissatisfaction with their consultation services and stated that these services were ineffective.

The majority of the respondents perceived parents and teachers to be satisfied with consultation services. However, approximately one fourth of speech therapists and occupational therapists perceive parents to be dissatisfied or very dissatisfied and almost one third of the speech therapists and one fifth of the occupational therapists perceived teachers to be dissatisfied with consultation services.

Over 90% of the total sample indicated that teachers evidenced an average, above average, or excellent ability to carry through with ideas or suggestions or to benefit from consultation. One fifth of psychiatric social workers, however, indicated that teacher abilities in this area were below average.

Training either at the preservice level or inservice level appears to be necessary to provide more effective consultation services to teachers. Over 70% had not attended college courses which prepared them for this responsibility. Approximately one third of Department of Health service providers had not received inservice training regarding consultation. Over two thirds of speech therapists had not received inservice training on consultation. Two thirds of all respondents indicated a need for additional training in order to provide more effective consultation services.

A number of different activities can occur during consultation between the therapist and the teacher. Some of these activities were perceived to be more helpful then others. "Information provided by the therapist that is specifically requested" by the teacher was judged by all types of related service providers as being the most helpful of the activities which can occur during consultation. "Recommendations regarding a specific student's problem(s)" and "demonstration of appropriate therapeutic/ remedial techniques or activities" were also rated highly by the survey respondents. "Establishment of oral or written agreements" or "discussions regarding appropriate data collection to analyze student problems or to assess effectiveness of activities" were judged to be the least helpful of the activities presented for rating.

Further investigation into the following areas regarding consultation appear to be justified:

1. Factors accounting for variability in (a) caseload size, (b) number of teachers receiving consultation services, and (c) duration of consultation sessions across and within related service provider professions.

2. Training needed to more adequately prepare related service providers to provide effective consultation services.

3. Differences and similarities in consultation activities initiated by related service providers.

4. Effectiveness of consultation services as opposed to direct services.

XI. SPECIAL EDUCATION TEACHER PERCEPTIONS OF CONSULTATION SESSION PROVIDED BY RELATED SERVICE PROFESSIONALS

INTRODUCTION

The purpose of the study was to analyze and describe from a special education teacher's perspective the consultation services that related service personnel provide to special education teachers in the Hawaii public school system. This study served as a companion to the study cited in the previous chapter. The previous study examined related service provider perceptions of consultation services; this study examined special education teacher perceptions of consultation. Both studies were designed to assist professionals in the educational and health service communities in Hawaii to acquire further information about (a) the perceived effectiveness and benefit(s) of consultation, (b) the amount of training needed to assist related service providers to implement the model more effectively, (c) the usefulness of a variety of activities which may occur during consultation, (d) the types of children who might benefit most from consultation services, and (e) methods to improve the consultation model.

METHOD

Survey Participants

In December 1985, Project Staff disseminated a 21-item survey questionnaire to 119 special education teachers employed in the State of Hawaii Department of Education. These 119 teachers were a 14% randomly selected sample of 851 special education teachers in the Department of Education. A total of 66 of the 119 intended recipients of the survey responded. Respondents represented 55% of the sample of teachers selected and almost 8% of the total special education teacher population employed by the Department. Table 60 displays the breakdown of the respondents by district. Table 61 displays the respondents' length of employment as special education teachers. Over 56% (n=37) had been employed in their occupation between 4 and 10 years. Respondents appear to be an experienced group of teachers representative of the special education teachers employed in the public school system in Hawaii.

Survey

The survey instrument contained items on (a) the number of students served through consultation, (b) the frequency and duration of consultation services, (c) perceptions of the understanding and nature of consultation, (d) requirements, appropriateness, and benefits of consultation, (e) satisfaction with and perceived effectiveness of consultation, (f) perceptions of the abilities of related service professionals to provide consultation services, (g) preservice and inservice training, (h) ratings of helpfulness of various activities that can take place during consultation, (i) types of students which benefit most and least from consultation, and (j) methods to improve consultation between special education teachers and related service providers. A copy of the survey instrument is included in Appendix G.

Table 60

Special Education Teacher Respondents by District to Consultation Survey

District	# of Surveys Disseminated	# of Surveys Returned	% Response Rate	% of Total Response
Central	23	18	78.3	27.3
Hawaii	10	3	30.0	4.5
Honolulu	23	11	47.8	16.7
Kauai	9	4	44.4	6.1
Leeward	25	15	60.0	22.7
Maui	7	5	71.4	7.6
Windward	22	10	45.5	15.2
TOTAL	119	66	55.5	100.0

Table 61

Length of Employment in Current Occupation (Special Education Teacher/ Consultation Survey)

Response	Frequency	% of Respondents
Less than 1 year	3	4.5
Between 1 and 3 years	12	18.2
Between 4 and 7 years	19	28.8
Between 8 and 10 years	18	27.3
More than 10 years	12	18.2
No response	3	3.0

Note. Mean = 7.3 years; range = 4 months to 20 years

RESULTS

Students Served Through Consultation

Table 62 displays the number of students served through consultation by each of the five types of related service professionals. Teachers indicated that speech therapists served 189 of their students through consultation. Approximately 3 students per teacher were reportedly served.

Teachers Receiving Consultation

Respondents were asked if they had received consultation services from each of the five types of professionals in the current year. Table 63 displays the results of their responses. Speech therapists provided consultation services to the largest percentage of special education teachers (63%).

Frequency of Consultation

Respondents indicated the number of times they received consultation services from each of the five types of related service professionals in an average month. Results are displayed on Table 64. Special education teachers reported an average of just over 2 sessions of consultation with speech therapists in an average month. Psychiatric social workers are reported to be consultants with special education teachers on a less frequent basis (average = .49 sessions per month) than other related service professionals.

Understanding of Consultation

Respondents were asked if they considered related service providers to have an understanding of the nature and purpose of consultation provided to teachers. These special education teachers were asked to indicate their perception of their own understanding of consultation between themselves and each of the five types of related service providers. Results are displayed in Table 65.

Duration of Consultation Sessions

The average length of consultation sessions provided by each of the five types of related service professionals is displayed in Table 66.

Table 62

Number of Students Served Through Consultation Provided by Related Service Providers As Reported by Special Education Teachers

Provider	f	Total Number of Students	Average Per Teacher	Range
Speech Therapist	64	189	2.95	0-15
Occupational Therapist	65	86	1.33	0-8
Physical Therapist	62	53	.86	0-8
Clinical Psychologist	62	44	.71	0-12
Psychiatric Social Worker	62	39	.63	0-10

Table 63

Special Education Teachers Who Reported Receiving Consultation Services From Related Service Providers in Current Year (1985)

Provider	f	% Receiving Service
Speech Therapist	65	63.1
Occupational Therapist	63	46.0
Physical Therapist	62	35.5
Clinical Psychologist	58	22.4
Psychiatric Social Worker	59	18.6

Table 64

Average Frequency of Consultation with Related Service Provider in an Average Month As Reported by Special Education Teachers

Related Service Receiving Consultation	f	Mean	Range	% Receiving Consultation
Speech Therapist	51	2.14	0-12	61
Occupational Therapist	43	1.18	0-5	44
Physical Therapist	40	0.76	0-4	35
Clinical Psychologist	38	0.85	0-8	26
Psychiatric Social Worker	41	0.49	0-4	22

Table 65

Understanding of the Nature and Purpose of Consultation Reported by Special Education Teachers

	Therapist Understands			Teacher Understands		
		Percent			Percent	
Related Service Provider	f	Yes	No	f	Yes	No
Speech Therapist	51	82	18	60	77	23
Occupational Therapist	43	80	20	51	77	23
Physical Therapist	40	78	22	46	72	28
Clinical Psychologist	38	57	43	37	57	43
Psychiatric Social Worker	41	59	41	39	49	51

Table 66

Average Duration of Consultation Sessions with Related Service Providers, As Reported by Special Education Teachers

Related Service Provider	f	Mean (minutes)	Range (minutes)
Speech Therapist	35	21.8	1-60
Occupational Therapist	26	27.8	5-105
Physical Therapist	18	31.8	5-180
Clinical Psychologist	13	38.0	10-120
Psychiatric Social Worker	2	25.0	10-60

Note. f = number of special education teachers who responded to the question with an answer indicating the length of session. Answers indicating zero minutes were not included in the calculations or presented in the table.

Purpose, Requirement, Appropriateness and Benefits

Respondents were given a series of statements regarding the purpose, requirements, appropriateness, and benefits of consultation and were asked to state the degree to which they agreed or disagreed with those statements. Table 67 displays those statements and the percentage of respondents who strongly agreed, agreed, disagreed, or strongly disagreed with each statement. Over 93% agreed or strongly agreed with the following requirements of consultation: (a) a spirit of collaboration between the teacher and therapist, (b) teachers as an active participant in the decision-making process, and (c) data collection and analysis as an essential part of the process. Over 87% felt that consultation was an appropriate service model for related services. Approximately 90% indicated that consultation benefits students, teachers, and therapists.

Satisfaction with Consultation Services

Respondents were asked to rate on a scale of 1 to 8 (1 being very dissatisfied, 8 being very satisfied) the degree to which they were satisfied with the consultation services provided by each of the five types of related service professionals. The percentage of special education teachers who were either satisfied or very satisfied with the consultation services provided by each type of professional are as follows: speech therapist (72%), occupational therapist (62%), physical therapist (68%), clinical psychologist (44%), and psychiatric social worker (49%).

Respondents were also asked to rate the effectiveness of consultation services. The percentage of special education teachers who rated consultation services provided by each type of related service professional

Table 67

Special Education Teacher Responses to Statements Regarding Consultation Services

Consultation Services Employed by Related Service Professionals:	Strongly Agree	Agree	Disagree	Strongly Disagree
Provide therapeutic services indirectly to the student through the teacher	19.7%	50.8%	23.0%	6.6%
Require a spirit of collaboration between the teacher and therapist	62.9%	35.5%	1.6%	0.0%
Require a teacher to be an active participant in the decision-making process	43.5%	53.2%	3.2%	0.0%
Require data collection and analysis as an essential part of the process of consultation	30.6%	62.9%	6.5%	0.0%
Involve the consultant as an "expert" who tells the teacher what to do	13.1%	44.3%	34.4%	8.2%
Is an appropriate service model for related services	12.7%	74.5%	10.9%	1.8%
Are often a waste of teacher/ therapist time	1.6%	14.8%	52.5%	31.1%
Are often as effective as direct services	11.7%	48.3%	30.0%	10.0%
Are often of benefit to students	19.7%	68.9%	9.8%	1.6%
Are often of benefit to teachers	20.0%	70.0%	8.3%	1.7%
Are often of benefit to therapists	16.7%	75.9%	7.4%	0.0%

as either effective or very effective were as follows: speech therapist (78%), occupational therapist (67%), physical therapist (71%), clinical psychologist (41%), and psychiatric social worker (52%).

Additionally, respondents were asked to rate the degree to which parents and teachers were satisfied with the consultation model utilized by related service providers. Seventy-one percent of 49 respondents felt that parents were satisfied or very satisfied and 73% indicated that other teachers in their schools were satisfied with the model.

Rating of the Ability of Related Service Professionals To Provide Consultation

Respondents were requested to provide their perceptions of the abilities of the five types of professionals to provide consultation services. The percentage of special education teachers who rated the ability of each type of professional as either excellent, above average, or average is as follows: speech therapist (92%), occupational therapist (85%), physical therapist (95%), clinical psychologist (86%), and psychiatric social worker (83%). Ratings of satisfaction, effectiveness, and related service providers' abilities are displayed in Table 68.

Preservice Training and Inservice Training

Forty-four percent of the respondents replied that they had taken college courses which helped them to benefit from a consultation model of service delivery. Less than one fourth (23%) reported receiving inservice training on the consultation model. Over 57% felt they needed additional training to help them benefit from consultation services provided by related service professionals. Table 69 displays the results.

Teacher Provides Suggestions or Ideas

Participants in the survey indicated how frequently they provided suggestions or ideas during consultation with the five types of related service professionals (Table 70).

Helpfulness of Specific Consultation Activities

Special education teachers rated the helpfulness of activities that occur during consultation using a scale of 1 to 8 with 1 being "not helpful" and 8 being "extremely helpful." Forty-six percent of the teachers rated "therapist provides recommendations on activities teachers can implement to remediate a specific problem" as extremely helpful (rating=8) (mean rating=6.8). Similarly, 51% rated "therapist provides information that the teacher specifically requests" as extremely helpful (rating=8) (mean rating=6.7).

The lowest rated activity (mean rating=4.3) was "discussion of appropriate methods used for data collection to analyze a student's problem or to assess effectiveness of activities/methods used to remediate a problem." Six of 46 respondents (13%) felt this was not a helpful activity (rating=1). Results are displayed in Table 71.

Table 68

Special Education Teachers Perceptions of Satisfaction/Effectiveness of Consultation Services

Question	Position	f	% very satisfied	% satisfied	% dissatisfied	% very dissatisfied
Generally, how satisfied are you with the consultation services provided to you by:	Speech Therapist	60	25.0	46.7	13.4	15.0
	Occupational Therapist	50	26.0	36.0	20.0	18.0
	Physical Therapist	40	22.5	45.0	20.0	12.5
	Clinical Psychologist	32	6.3	37.5	21.9	34.4
	Psychiatric Social Worker	32	9.1	39.4	15.2	36.1
Generally, how satisfied are parents with the consultation model used by related service providers?		49	2.0	69.4	16.3	12.3
Generally, how satisfied are teachers with the consultation model used by related service providers?		48	0.0	72.9	12.5	14.6
			% very effective	% effective	% ineffective	% very ineffective
Generally, how effective are the consultation services provided to you by:	Speech Therapist	55	23.7	54.5	12.7	9.1
	Occupational Therapist	42	23.8	42.8	21.4	11.9
	Physical Therapist	35	28.6	42.8	20.0	8.6
	Clinical Psychologist	27	7.4	33.3	25.9	33.3
	Psychiatric Social Worker	27	7.4	44.4	18.5	29.6
			% excellent	% above average	% average	% below average
What is your perception of the ability of related service professionals to provide consultation services to you?	Speech Therapist	60	25.0	35.0	31.6	8.3
	Occupational Therapist	60	27.1	31.4	25.0	14.6
	Physical Therapist	39	28.2	30.7	5.9	5.2
	Clinical Psychologist	29	17.2	17.2	51.7	13.8
	Psychiatric Social Worker	29	17.2	27.5	37.9	17.2

Table 69

Preservice and Inservice Training Received by Special Education Teachers on the Consultation Model of Service Delivery

Question	f	Yes	No
Taken college courses to prepare or help you to benefit from a consultation model of service delivery?	63	44.4%	55.6%
Received inservice training from the Department of Health on the consultation model?	59	8.5%	91.5%
Received inservice training from the Department of Education on the consultation model?	61	23.0%	77.7%
Feel you need additional training to help you benefit from consultation provided by related service professionals?	61	57.4%	42.6%

Table 70

Percentage of Teachers Who Reported Providing Suggestions or Ideas in Consultation With Related Service Providers

		% of Teachers Providing Suggestions/Ideas			
Related Service Provider	f	Never	Sometimes	Usually	Always
Speech Therapist	53	11.3	60.4	22.6	5.7
Occupational Therapist	41	17.1	43.9	36.6	2.4
Physical Therapist	33	18.2	54.5	24.2	3.0
Clinical Psychologist	28	42.9	28.6	21.4	7.1
Psychiatric Social Worker	27	40.7	40.7	14.8	3.7

Table 71

Special Education Teachers' Ratings of Helpfulness of Specific Consultation Activities

Activity	f	Mean Rating	Standard Deviation
Therapist provides information that is specifically requested	57	6.7	1.7
Therapist provides information/material that is not specifically requested	53	6.1	1.8
Therapist provides diagnosis/analysis of a specific student's problems	55	6.5	1.6
Therapist provides recommendations teachers can implement to remediate a specific problem	56	6.8	1.5
Therapist recommends ways to improve the learning environment of the classroom	49	5.3	2.1
Discussion of appropriate methods of data collection to analyze student's problem or assess effectiveness of methods to remediate problem	46	4.3	2.0
Discussion of appropriate materials that can be used in the classroom	53	5.6	2.0
Explanation of referral criteria to receive services provided by therapist	51	5.3	1.9
Demonstration of appropriate therapeutic/remedial techniques to be used in the classroom	54	6.2	1.9
Teacher provides ideas/suggestions on materials/techniques/activities to remediate student's problem	56	5.4	1.9
Establishment of an oral or written agreement specifying roles/responsibilities	48	5.6	2.0

Note. Mean ratings based on a scale of 1 to 8.

Students Benefiting Most

Teachers were asked in an open-ended question to identify the types of children that benefit most from consultation services provided by related service professionals. Table 72 displays those responses. Responses were classified under the following categories: (a) Specific Handicapping Condition (of Student), (b) Specified Problems/Impairments (of Student), (c) Generic Classifications, and (d) Contextual Factors.

Students Benefiting Least

The teachers were also asked in an open-ended question to identify the types of children that benefit least from consultation services provided by related service professionals (Table 73).

Suggestions for Improvement

The final item requested respondents to indicate how consultation between teachers and related service providers could be improved. Table 74 displays those responses. The most frequent responses identified the need to (a) develop a regular schedule for consultation, (b) improve and/or increase inservice training, and (c) develop methods to increase available time to provide consultation services.

DISCUSSION

As the demand for related services increases, consultation between therapists and teachers will play an increasingly important role as part of a spectrum of services to the special education population. Fiscal contraints and clarification of service provider roles and responsibilities are two additional factors that may facilitate the movement toward increased consultation services. Although consultation is becoming more widely utilized, very little is currently known about its impact upon students, teachers, and therapists.

In the present study, special education teachers did not report a sizable number of special education students having received consultation from related service providers. Sixty-four teachers reported that 189 special education students received consultation services from speech therapists (an average of approximately 3 students per classroom). Teachers also reported an average of less than one student per classroom receiving consultation services from either physical therapy or mental health professionals.

In contrast with these findings, a survey of related service providers' perceptions of consultation services (McClelland, Hirata, & Tosaki, 1986) resulted in sizable reported consultation caseloads by four of the five types of related service professionals. Clinical psychologists (n=2) reported an average consultation caseload size of 49 students while speech therapists reported the smallest consultation caseload size (approximately 3 students). The discrepancy between teacher and related service provider reports, particularly regarding mental health provider caseloads, could result from mental health professionals providing

Table 72

Types of Students that Special Education Teachers Perceive as Benefiting Most from Consultation Services Provided by Related Service Professionals

Teacher Response	Speech Ther.	Occ Ther.	Phys. Ther.	Clin. Psych.	Psych. Soc. Wk.
Specific Handicapping Condition					
Learning Disabled	13	6	3	7	9
Specific Learning Disabled K's, 1st graders	2	1			
Mentally Retarded	1	2			
Profoundly Mentally Retarded			1		
Severely Mentally Retarded	2	2	2		
Moderately Mentally Retarded	3	5	4		
Mildly Mentally Retarded	5	3	2	1	
Speech Impaired	9				
Hearing Impaired, children beginning to communicate	1				
Learning Impaired	1	1	1		
Visually Impaired		2			
Emotionally Handicapped/ Severely Emotionally Disturbed				11	8
Autistic	1				
Emotionally Disturbed with Specific Learning Disability				1	
Severely Multiply Handicapped	2	1	2		
Physically Handicapped		1	3		
Neurologically Impaired		1	1		
Other Health Impaired			1		
Specified Problems/Impairments					
Students with articulation problems	3				
Foreign students/Students with Limited English Proficiency	2				
Behavior problems				2	2
Withdrawn, hostile				1	1
Students who have difficulty accepting their disability, students with personality disorders				1	
Autistic behaviors, behavior problems family problems				1	1
Those with emotional problems	1	1	1	1	1
Students with severe problems	1				
Children having problems with specific skills - cutting, hopping, etc.		1	1		
Gross/fine motor delay		2	4		
Children with cerebral palsy		2			

(Table 72 continued)

Types of Students that Special Education Teachers Perceive as Benefiting Most from Consultation Services Provided by Related Service Professionals

Type of Student (Response from Teacher)	Speech Ther.	Occ. Ther.	Phys. Ther.	Clin. Psych.	Psych. Soc. Wk.
Generic Classifications					
Local Dialect	1				
All children receiving or needing services	2		2		
All special education students		2	1		
Milder cases		1	1		
Children who are truly ready to be without direct services	2	1	2		
Those who are well on their way and just need a boost and already feel positive about themselves	1	1	1	1	1
Problems that can be remedied through therapeutic services or by modifying environment		1	1		
Students willing to learn	1				
Very young children - elementary age	1	1	1	1	1
Contextual Factors					
Poor Home Environment					2
Those whose needs can be met by properly inserviced volunteers, aides, classroom teachers	1	1	1	1	1
Some			1		
None	2	3	1	2	2
OTHER RESPONSES					
Uncertain	2	1	1		
Not Applicable	3	1	4	5	3

Table 73

Types of Students that Special Education Teachers Perceive as Benefiting Least from Consultation Services Provided by Related Service Professionals

Teacher Response	Speech Ther.	Occ. Ther.	Phys. Ther.	Clin. Psych.	Psych. Soc. Wk.
Specific Handicapping Condition					
Learning Disabled	4			1	1
Moderately Mentally Retarded	1				
Emotionally Handicapped	1	1		1	1
Severely Multiply Handicapped		1			
Learning Impaired		1			
Specified Problems/Impairments					
Severe speech/language cases	2				
Children with no speech problems	1				
Those whose handicap is bounded to a great extent on physical problems	1	1	1	1	1
Stabilized cerebral palsy conditions		1	1		
Generic Classifications					
More severely involved cases	2	2	2		1
Low functioning students				1	1
Culturally affected students	1				
Well adjusted persons				1	1
Easily distracted/lazy/ no care attitude	2	1	1	2	2
Those requiring direct services	2	2	2		
Those who require the specific expertise of the related service provider	1	1	1	1	1
Those with no need for service		2	2	1	1
Special education students succeeding in regular physical education programs			1		
Children with abnormal development in specific areas- these would require more services	1	1	1		
High school students	1	1	1	1	1
All children could benefit	3	2	2	3	4
None	3	2	2	2	2
OTHER RESPONSES					
Unsure	1	1	1	1	1
Not Applicable	8	7	8	10	8

Table 74

Special Education Teacher Recommendations on Methods to Improve Consultation Services

Response	Frequency
Developing a regular schedule	11
Improving training/increasing inservice	10
Developing methods to increase time for consultation service	10
Improving communication	7
Increasing availability of therapist/services	4
Developing more awareness of roles/responsibilties/ duties/problems of others involved	3
Increasing personnel	2
Directing attention to particular types of students	1

consultation services to both special education and regular education students.

Consistent with teacher reports on students served was the reported percentage of teachers receiving consultation services. A majority (63%) of the teachers reported receiving consultation services from speech therapists during the year. Conversely, only one fifth of the same teachers reported having received such services from clinical psychologists and psychiatric social workers. It is not clear at this time whether such differences in reported percentages are the result of (a) shortages in personnel in the mental health children's teams, (b) a greater emphasis among mental health providers upon treatment rather than prevention, (c) time constraints, or (d) desires to provide services in clinical rather than school settings. Further investigation into this area appears warrented.

A sizable majority of the respondents indicated that special education teachers as well as speech therapists, occupational therapists, and physical therapists understand the nature and purpose of consultation. A substantially smaller percentage of special education teachers reported an understanding of consultation with mental health professionals.

These results are in sharp contrast to findings from the study on related service providers' perceptions reported above. Although results are comparable between special education teachers and speech, occupational, and physical therapists respectively, there exists a sizable discrepancy between special education teachers' and mental health professionals' perceptions. For example, while 100% of the mental health professionals responding indicated they understood the nature and purpose of consultation, less than 60% of those teachers responding in the present study reported the same perception.

Consultation requires a spirit of collaboration between the therapist and teacher, and requires the teacher to be an active participant in the decision making process. Although there was an overwhelming agreement by both special education teachers and related service professionals on these two requirements, over 50% of the teachers and related service professionals still agree with the perception that the consultant is an "expert" who tells the teachers what to do. These two viewpoints are inconsistent yet are mutually held by many who apparently do not perceive the inconsistency.

Although almost 90% view consultation as an appropriate service model and perceive it to be of benefit to students, only 60% of the special education teachers and 68% of related service providers feel that it is often as effective as direct services. There appears to be a greater acceptance of the utilization of consultation services, but there still exists a perception among many special education teachers and related service providers that children are better served through direct rather than indirect services. This issue can and should be resolved through a series of empirical studies.

Other discrepancies between special education teacher perceptions and related service provider perceptions are in regard to their personal satisfaction with and perceived effectiveness of the consultation model.

Speech therapists are clearly more dissatisfied with the model than other related service providers. While none of the mental health professionals in the related service provider survey expressed personal dissatisfaction with the consultation service they provided, over 50% of the special education teachers indicated a personal dissatisfaction with the consultation services provided by mental health professionals.

Very few special education teachers have received either preservice or inservice training to help them benefit from the consultation model of service delivery. Consequently, a majority feel they need additional training in this area.

There are a number of different activities which occur during consultation between the related service provider and the teacher. Some activities are perceived to be very helpful to teachers. Both teachers and related service providers perceived the following activities as being the 2 most helpful of the 11 consultation activities listed in the survey: (a) recommendations from therapists on activities that teachers can implement to remediate a specific problem, and (b) information from the therapist that the teacher specifically requests. Neither teachers nor related service providers consider the following activity to be as helpful as the other activities listed: discussion of appropriate methods used for data collection to analyze a student's problems or to assess effectiveness of activities/methods used to remediate the problem.

Further investigation into the following areas regarding consultation appear to be justified:

1. Determination of (a) the types of students who currently receive consultation services, (b) the frequency with which those services are provided, and (c) the average duration of service.

2. Effectiveness of consultation services as opposed to direct services.

3. Factors influencing the variability in perceptions of special education teachers regarding the provision of consultation services by each type of related service provider.

4. Training needed by special education teachers to more fully benefit from the consultation model of service delivery.

XII. EVALUATION OF THE DISTAR LANGUAGE PROGRAM IN MAUI DISTRICT

INTRODUCTION

The Distar Language Program is a direct instruction language program. It has been asserted that many of the principles and concepts of direct instruction have wide relevance for special education populations (Bateman & Carnine, 1977; Reith, Polsgrove, & Semmel, 1982; Stevens & Rosenshine, 1981). Direct instruction shares a number of features with task analytic, behavioral approaches commonly used in special education, yet it has a number of distinguishing features as well. These include (a) the teaching of "general" case problem solving strategies, (b) a maximal use of oral instruction as opposed to written worksheets, (c) an emphasis on small group as opposed to individualized instruction, and (d) a systematic technology of correction procedures to transform student errors into constructive learning experiences.

A few studies have attempted to examine the impact of the Distar Language Program upon student cognitive and/or academic progress, but none have investigated the impact of the program on oral language skills and none have utilized the Test of Language Development as a dependent measure. The current study in Maui district is a unique examination of the Distar Language Program in these two respects: the examination of the effects of the Program on oral language development, and the utilization of a standardized oral language instrument (the Test of Language Development) to measure the effectiveness of the program. A third departure from previous studies is the effort to document whether the Program was actually implemented and carried out as intended. The documentation effort utilized a focused interview procedure which probed and reviewed the behaviors of speech pathologists and communication aides using the Program. Charters and Jones (1973) have emphasized the importance of an evaluation to determine the extent to which a program is actually being implemented.

Two studies of the effects of the Distar Language Program merit discussion. The first study (Maggs & Morath, 1976) investigated the effects of the Program on moderately to severely retarded children in a state institution. The program lasted 2 years during which time students in the experimental group gained an average of 22.5 "mental age months" for the 24 months in the program. A control group which received another standardized language program supplemented by teacher-made materials gained an average of 7.5 mental age months in the 24 months of the program. The second study (Gersten and Maggs, 1981) used a norm-referenced evaluation design to assess cognitive and academic progress over 5 years. Students completed both Distar Language and Distar Reading Programs. Moderately retarded children in the sample displayed I.Q. gains at a significantly faster rate than their non-handicapped peers.

The purpose of the present study conducted by the AIRS Project was to provide information that could be used to evaluate the Distar Language Program in Maui District. Project staff caution, however, against a sole reliance upon the present study to determine the value and effectiveness of the Program.

METHOD

Participants

In February 1985, and 1 year later in February 1986, a sample of students in Maui District receiving the Distar Language Program in speech/language therapy were administered the Test of Language Development (TOLD). In February, 1985, 79 students in Maui District were recipients of the Distar Language Program. Forty-five of those students were randomly selected for inclusion in the study and were administered the TOLD. Two schools (Hana Elementary and Lanai Elementary) representing 4 students were excluded because of time and cost factors. In February 1986, 42 of the original 45 students were re-administered the Test of Language Development. Three of the original students had moved to other districts and no longer received the Distar Program. In addition, one student who was re-tested was unable to follow directions, therefore results of the attempted administration of the test to that student were not included in the final computations. A description of the sample by school, grade level, sex, and handicapping condition is included in Tables 75-78. Students in the sample are considered to be representative of students in the Distar Language Program in Maui District.

Test Instrument

The wide age range of students in the Distar Language Program necessitated the administration of two versions (i.e., levels) of the Test of Language Development. The Primary level is used to measure language skills of children between the ages of 4-0 (i.e., 4 years, 0 months) and 8-11. The Intermediate level is used to measure the language skills of most children between the ages of 8-6 and 12-11. Both the TOLD-Primary and the TOLD-Intermediate are standardized tests used to (a) measure spoken language in the receptive and expressive domain, and (b) provide the examiner with a comparative index of the student's language strengths and weaknesses.

In linguistic theory, as explained by the authors of the TOLD, the major components of language are called linguistic features and are usually identified as phonology, syntax, morphology, and semantics (Hammil & Newcomer, 1982). Morphology is often included as a part of syntax. In addition to linguistic features, language is usually dichotomized into listening (receptive) and speaking (expressive) systems. Each subtest of the TOLD is primarily either a listening or speaking task and a measure of phonology, syntax, or semantics.

For testing purposes, two subtests on the TOLD-Primary which measure phonology were excluded in the administration of the test and had no bearing upon composite scores.

Table 75

Number of Students Administered the TOLD, by Grade Level

Student Grade Level	Pretest	Posttest
Kindergarten	3	0
First	7	1
Second	18	9
Third	5	14
Fourth	8	5
Fifth	4	8
Sixth	0	4
TOTAL	45	41

Table 76

Number of Students Administered the TOLD, by School Attended

School	Pretest	Posttest
Kamehameha	4	4
Wailuku	11	7
Lihikai	5	4
Kahului	10	8
Paia	4	4
Makawao	4	5
Kihei	5	5
Kula	2	2
Waihee	0	2
TOTAL	45	41

Table 77

Number of Students Administered the TOLD, by Sex

Sex of Student	Pretest	Posttest
Male	28	24
Female	17	17
TOTAL	45	41

Table 78

Number of Students Administered the TOLD, by Student Handicapping Condition

Handicapping Condition	Pretest	Posttest
Learning Disabled	42	38
Mildly Mentally Retarded	3	3
TOTAL	45	41

The following is a brief description of each of the subtests on the Primary and Intermediate levels of the TOLD:

Primary

1. Picture Vocabulary--a 25-item receptive subtest measuring the extent to which a child understands meanings associated with spoken English words.

2. Oral Vocabulary--a 20-item expressive subtest measuring a child's ability to give oral definitions to common English words provided by the examiner.

3. Grammatic Understanding--a 25-item receptive subtest assessing a child's ability to comprehend the meaning of sentences.

4. Sentence Imitation--a 30-item expressive subtest measuring a child's ability to produce correct English sentences.

5. Grammatic Completion--a 30-item receptive subtest measuring the ability to recognize, understand, and use common English morphological forms.

Intermediate

1. Sentence Combining--a 20-item expressive subtest considered to be primarily a speaking task; requiring the child to form a compound or complex sentence from two or more sentences uttered by the examiner.

2. Characteristics--a 50-item receptive subtest requiring a child to indicate the validity or truth of sample statements supplied by the examiner.

3. Word Ordering--a 50-item expressive subtest which requires the child to reorder series of randomly ordered words into complete, correct sentences.

4. Generals--a 25-item expressive subtest in which a child states how three words spoken by the examiner are alike; indicating the relationship among the words or the superordinate category to which they belong.

5. Grammatic Comprehension--a 40-item receptive subtest measuring the child's ability to recognize incorrect grammar in spoken sentences.

Although the subtests differ on the Primary and the Intermediate levels, the subtests as well as the entire tests cover the same linguistic features and systems. Results from the two levels are therefore comparable.

Test Administration

In February 1985, 45 students were administered the TOLD. Of these 45 students, 27 received the Primary level and 16 were administered the Intermediate level. In February 1986, 41 students were readministered the TOLD. Nineteen students received the Primary level and 22 received the Intermediate level. Three examiners were involved in the administration of the February 1985 administration of the TOLD. Each examiner administered the TOLD to 15 students. In February 1986, two examiners administered the TOLD. One of these two examiners was also involved in the pretest administration and administered the TOLD to 13 students in the posttest. The second examiner was involved in the study for the first time during the posttest, and administered the TOLD to 28 students.

RESULTS

Subtest Scores

Table 79 displays the standard scores of each of the five subtests in the Primary and Intermediate levels on both the pretest and the posttest. The mean standard score for subtests ranged from a low of 2.05 (Sentence Imitation on the Primary level posttest) to a high of 5.47 (Picture Vocabulary on the Primary version posttest). The greatest average gain from pretest to posttest was 1.29 standard score points on the Characteristics subtest of the Intermediate level.

Standard scores on the subtests are transformations of subtest raw scores. The standardized mean score of each subtest was set at 10 and the standard deviation fixed at 3. A student's subtest standard score would provide a general index of that student's performance on a particular subtest. The following ranges on subtest scores are rough equivalents of levels of performance:

18-20	Superior
14-17	Above Average
7-13	Average
3-6	Below Average
0-2	Poor

Spoken Language Standard Score

Spoken Language is the first of five composites that can be formed by summing combinations of the five subtests of the TOLD. Standard scores for each of the composites are deviation scores that are formed from pooling or summing the standard scores of the subtests. Standard scores themselves are transformations of raw scores that establish a common subtest mean score and standard deviation. Spoken Language is composed of the sum of all five subtest standard scores. The range in Spoken Language standard scores was from 10 to 35 for the pretest and 6 to 37 for the posttest. The

Table 79

TOLD Subtest Standard Scores

	Pretest		Posttest		Difference
	Mean	Range	Mean	Range	(Post-Pre)
Primary					
Picture Vocabulary	4.83	1-11	5.47	1-10	+.64
Oral Vocabulary	4.87	2-8	4.63	2-10	-.24
Gram. Understanding	5.09	1-10	5.42	1-8	+.33
Sentence Imitation	3.09	1-7	2.05	1-6	-1.04
Gram. Completion	3.17	1-6	3.68	1-6	+.51
Intermediate					
Sentence Combining	2.94	1-5	3.36	1-8	+.42
Characteristics	3.94	1-12	5.23	1-15	+1.29
Word Ordering	2.83	1-5	3.09	1-6	+.26
Generals	3.78	2-6	3.23	1-6	-.55
Gram. Comprehension	4.61	2-9	5.23	2-14	+.40

mean Spoken Language standard score was 19.6 for the pretest and 20.7 for the posttest.

Listening Standard Score

Listening, the second composite, consisted of the sum of two standard scores: (a) the Picture Vocabulary and Grammatic Understanding subtests found on the Primary version, and (b) the Characteristics and Grammatic Completion subtests on the Intermediate version of the TOLD. The pretest mean listening standard score was 9.4 with a range from 3 to 17. The posttest mean listening standard score was 10.6 with a range from 3 to 22.

Speaking Standard Score

The third composite, Speaking, consisted of the sum of the standard scores of three subtests: (a) the Oral Vocabulary, Sentence Imitation, and Grammatic Completion subtests of the TOLD-P; and (b) the Sentence Combining, Word Ordering, and Generals subtests of the TOLD-I. The pretest mean Speaking standard score was 10.4 with a range from 5 to 19 and the posttest mean was 10.1 with a range from 3 to 22.

Semantics Standard Score

The fourth composite, Semantics, consisted of the sum of two standard scores: (a) the Picture Vocabulary and Oral Vocabulary subtests of the TOLD-P, and (b) the Characteristics and Generals subtests of the TOLD-I. The mean pretest Semantics standard score was 8.8 with a range from 3 to 19 and the mean posttest standard score was 9.5 with a range from 2 to 19.

Syntax Standard Scores

The final composite, Syntax, consisted of the sum of three subtest standard scores: (a) Sentence Combining, Word Ordering, and Grammatic Comprehension on the TOLD-I; and (b) Grammatic Understanding, Sentence Imitation, and Grammatic Completion on the TOLD-P. The mean pretest Syntax standard score was 11.0 with a range from 6 to 20 and the mean posttest score was 11.4 with a range from 4 to 22.

Spoken Language Quotient

The Spoken Language Quotient is a conversion of the Spoken Language Standard Score. It is the most comprehensive of the composite quotients and provides a general index of the student's overall oral language abilities. Standard scores are converted to quotients that have a standardized mean of 100 and a standard deviation of 15. Test performance in terms of the quotients could be roughly interpreted as follows:

Score Range	Level of Performance
131-150	Superior
116-130	Above Average
85-115	Average
70-84	Below Average
69 or below	Poor

The average (mean) Spoken Language Quotient of 41 students on the pretest was 59.0. The mean Spoken Language Quotient of those same students on the posttest was 60.2. Scores ranged from a low of 47 to a high of 79 on the posttest and from 42 to 82 on the posttest.

Listening Quotient

The Listening Quotient is a conversion of the Listening standard score. The mean Listening Quotient was 68.2 on the pretest and 71.9 on the posttest. The pretest scores ranged from 49 to a high of 91 and posttest scores ranged from 49 to 106.

Speaking Quotient

The average Speaking Quotient score was 58.2 on the pretest and 57.5 on the posttest. Scores ranged from 47 to a high of 76 on the pretest and from 43 to 83 on the posttest.

Semantics Quotient

The mean Semantics Quotient score was 66.5 on the pretest and 67.9 on the posttest. Scores ranged from 49 to a high of 97 on the pretest and from 46 to 97 on the posttest.

Syntax Quotient

The mean Syntax Quotient score on the pretest was 59.3 and the mean score on the posttest was 60.3. Scores ranged from 49 to a high of 79 on the posttest and from 45 to 83 on the pretest.

Comparison of Pretest and Posttest Composite Scores

Table 80 displays the standard scores and quotients of each of the five composites on both the pretest (February, 1985) and the posttest (February, 1986). The *t*-test comparisons between the mean pretest and posttest scores of each of the five composite quotients and standard scores revealed no statistically significant differences between pretest and posttest scores of any of the composites. Table 81 displays the results of *t*-tests comparing pretest and posttest composite scores.

Table 80

Pretest and Posttest Composite Scores (TOLD)

	Standard Scores			
	Pretest		Posttest	
Standard Score	Mean	Range	Mean	Range
Spoken Language (5 subtests)	19.85	10-35	20.73	6-37
Listening (2 subtests)	9.41	3-17	10.63	3-22
Speaking (3 subtests)	10.39	5-19	10.10	3-22
Semantics (2 subtests)	8.83	3-19	9.51	2-19
Syntax (3 subtests)	11.02	6-20	11.44	4-22

	Quotients			
	Pretest		Posttest	
Quotients	Mean	Range	Mean	Range
Spoken Language	58.95	47-77	60.17	42-82
Listening	68.24	49-91	71.90	49-106
Speaking	58.14	47-76	57.46	43-83
Semantics	66.49	49-97	67.90	46-97
Syntax	59.34	49-79	60.29	45-83

Table 81

Results of t-tests Comparing Pretest and Posttest Composite Scores of the TOLD

Standard Scores

	Means				
Standard Score	Pre test	Post test	Difference	t-value	2-tail Prob.
Spoken Language (5 subtests)	19.85	20.73	+.88	1.08	.29
Listening (2 subtests)	9.41	10.63	+1.42	1.42	.16
Speaking (3 subtests)	10.39	10.10	-.29	-.71	.49
Semantics (2 subtests)	8.83	9.51	+.68	1.15	.26
Syntax (3 subtests)	11.02	11.44	+.42	.78	.44

Quotient Scores

	Means				
Quotient	Pre test	Post test	Difference	t-value	2-tail Prob.
Spoken Language	58.95	60.17	+1.22	1.10	.28
Listening	68.24	71.90	+3.66	1.70	.10
Speaking	58.14	57.46	-.68	-.78	.44
Semantics	66.49	67.90	+1.41	.86	.39
Syntax	59.34	60.29	+.95	.85	.40

Gain Scores of Individual Students

Figure 29 displays the range in gain scores of students in the sample from pretest to posttest. Gains in quotient scores are displayed first. Individual changes in Spoken Language Quotient scores ranged from a loss of 17 points to a gain of 16 points from pretest to posttest. Similarly, individual changes in Listening Quotient scores ranged from a loss of 18 points to a gain of 39 points. Gains (and losses) among the individual subtest standard scores are also displayed. The largest range in change scores on subtests occured in the Characteristics subtest of the Intermediate level, ranging from a loss of 6 standard score points to a gain of 10 standard score points.

DISCUSSION

The Distar Language Program is a direct instruction program used by speech therapists and communication aides in Maui District in therapy sessions with a total involvement of approximately 80 students. Use of the Program by speech therapists and communication aides in Maui District began in September and October 1984. After the Program was implemented, AIRS Project staff were requested to formulate and carry out an evaluation study of the effectiveness of the Program in improving the oral language skills of those students receiving the Program. A random sample of students was selected for inclusion in the study and students administered a standardized oral language instrument believed to most completely measure oral language skills directly attributable to the Program. It should be emphasized that the research design chosen for use in the study was a quasi-experimental rather than an experimental design. Because students had already been selected for and had been recepients of the Distar Language Program several months prior to initiation of the study, strict experimental control over several variables could not be achieved. In addition, an equivalent control group could not be found, therefore comparisons with other students not receiving the Program in terms of gains in oral language skills could not be made. Because of the lack of strict experimental control of both independent and dependent variables and because a control group could not be assigned, cautions in interpretation of results should be made and understood.

Between February and May 1985, AIRS Project staff conducted Level of Use Interviews to document the extent to which the Distar Language Program was being implemented by four communication aides and seven speech therapists. The Level of Use Interview is a specially developed, 20-30 minute interview procedure designed to probe and review the self-reported behaviors of individuals using an innovation (Loucks, Newlove, and Hall, 1976). Results of the interviews indicated that all essential components of the Distar Language Program were in place and that most therapists and aides followed them routinely. They displayed knowledge of the short and long term effects of the Program and reactions to the Program were generally favorable. In view of the results from these interviews, it is reasonably certain that the Distar Language Program was utilized with the general principles and concepts of the Program intact.

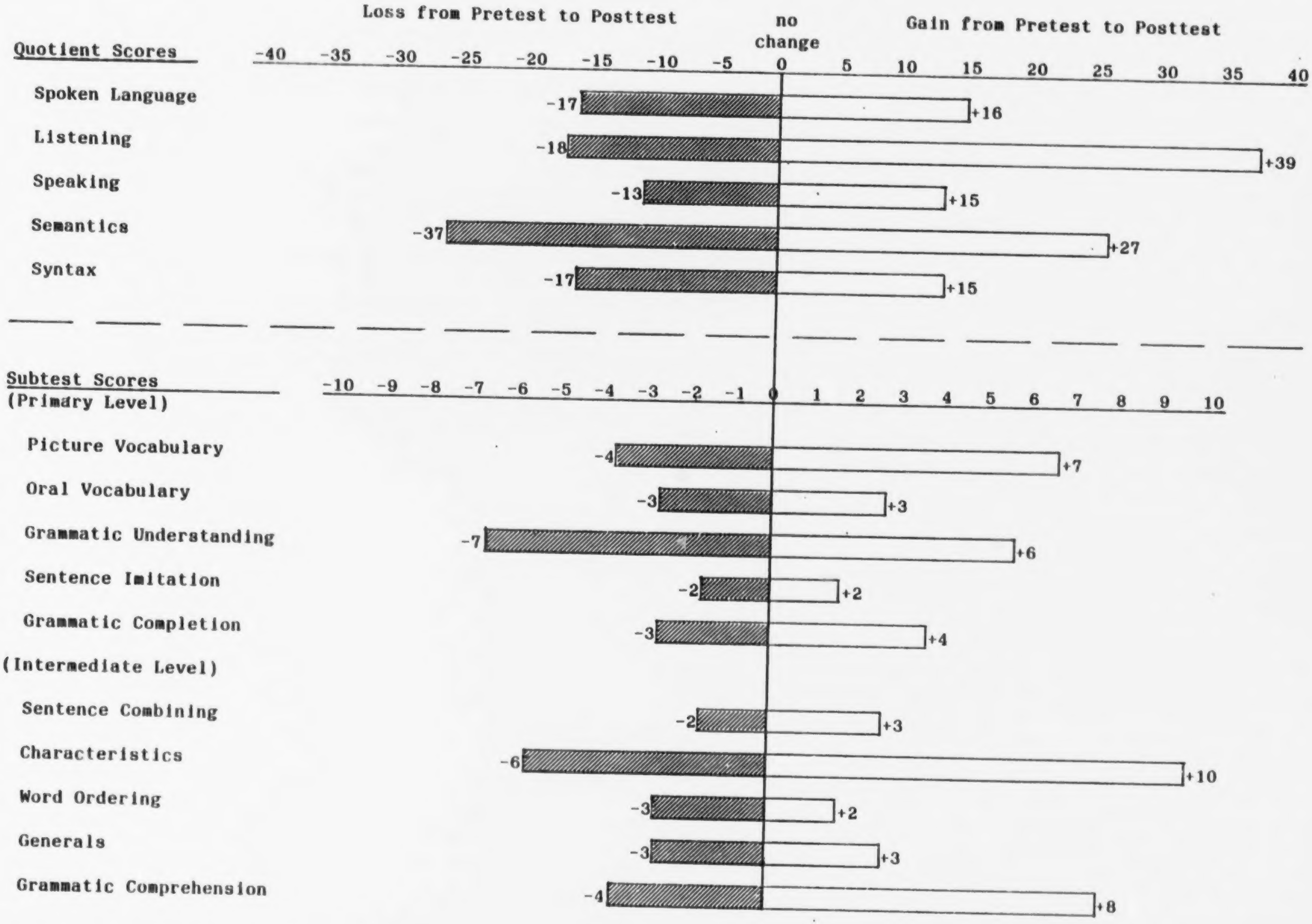

Figure 29. Range of gain (or loss) from pretest to posttest administrations of the TOLD.

A further caveat regarding interpretation of composite scores on the TOLD is in order. Standard scores of a number of students on the five composites of the TOLD were too low to be converted to quotient scores on tables listed in the TOLD manuals. Therefore it was necessary for AIRS Project staff to extrapolate quotient scores downward and utilize calculations based upon those extrapolations. The extrapolation allowed for mean pretest and posttest quotient scores to be established.

No statistically significant differences in pretest and posttest composite standard or quotient scores were found. The sample chosen did not appear to demonstrate statistically significant gains in composite scores from pretest to posttest.

Among the five composites, the greatest relative gain from pretest to posttest was in listening skills as evidenced by an average gain of 3.66 points from pretest to posttest on the composite. It should be stressed that this gain is still not statistically significant.

At least two possibilities could have accounted for a relatively greater gain on the listening composite than on other composites. The first was the possibility that the Distar Language Program was apparently more effective in helping children to develop listening or receptive language than expressive language. The second possibility was that those subtests comprising the listening quotient were comparatively "easier" than the other subtests on the TOLD. Although students did not demonstrate gains in language skills in comparison with their regular education peers, they did not fall behind in language skills either. The students in the Distar Language Program did not appear to be gaining on their regular education classmates in the development of oral language skills; they were at least keeping pace with them because there were no significant mean drops in quotient scores or percentiles.

The possibility exists that a significant number of skills developed through the Distar Language Program were not measured by the Test of Language Development. For this reason, other measures to document effects of the Program are recommended. These measures can and should include both formal and informal assessment techniques.

The following recommendations regarding evaluation of the Distar Language Program should be considered:

1. Though a majority of students have completed two school years (September 1984 to June 1986) in the Program, pretest and posttest administrations of the TOLD were only 1 year apart (February 1985 and February 1986). The possibility exists that significant results will be more readily demonstrated with the passage of another year in the Program. A third administration of the TOLD in February 1987 is recommended.

2. The Test of Language Development appears to be a highly valid, reliable, and appropriate instrument to measure oral language skills. However, the domain of oral language is sufficiently large that the test may not "capture" all skills developed by the Program. Other informal and formal measures should be utilized as tools to evaluate the Distar Language Program.

3. Several students have already exited the Distar Language Program. A follow-up study of those students who have exited the Program should be considered.

XIII. SYNTHESIS AND CONCLUSIONS

Vacancies and Turnovers of Related Service Professionals

Results of a personnel record review and analysis of statistical data on vacancies and turnovers in related service provider positions indicate that the State of Hawaii has experienced a chronic problem in attracting and retaining qualified related service professionals. Annual turnover rates in these positions ranged from 19% to 35%. Current vacancy rates in these positions at the time of the study ranged from 10% to 35%.

The Project conducted two studies to investigate possible factors accounting for such high rates of turnovers and vacancies. The first study obtained the perspectives of administrators of those factors that were major contributors to the difficulties in hiring and retaining therapists. Administrators most frequently identified a relatively low salary scale, an insufficient number of applicants, and poor working conditions as the three dominant factors accounting for the difficulty in filling therapist vacancies. A low salary scale and poor working conditions were also identified as the two prominent "culprits" associated with difficulties in retaining such personnel. Competition with the private sector was also seen as a major contributing factor.

The second study surveyed the perceptions of a sample of related service providers who had left their positions. Therapists who had left their positions provided somewhat similar perceptions. Although dissatisfaction with the recruitment/hiring process was the most frequently cited primary reason for leaving one's position, dissatisfaction with the low salary scale, and attraction to a competitive market in the private sector were the second and third most frequently identified primary reasons. Other reasons included dissatisfactions with both working conditions and the service delivery model.

A Futures-Oriented Planning Conference enabled key decision makers to identify strategies which they could independently and collectively develop and pursue to ameliorate the current situation. Recommendations from workshop deliberations included (a) developing minimum standards regarding the physical conditions in which therapy is provided, (b) providing financial incentives beyond incremental pay raises, (c) investigating inservice requirements and resources, (d) developing closer working relationships between Department of Education administrators and mental health administrators, and (e) reviewing and analyzing service delivery models. Problems associated with related service employment turnovers and vacancies will not be quickly remedied. Consultation with agency officials has been initiated, and plans have been developed to follow-up on conference recommendations.

Therapist Caseloads

The Project conducted seven studies which examined therapist caseloads in one respect or another. Average monthly caseloads for occupational therapists, physical therapists, and speech therapists were obtained from reviews of monthly logs or statistical reports submitted by individual therapists. Administrators also provided their perspectives of caseload levels of related service providers. A little over one half to almost three fourths of the administrators surveyed thought therapist caseloads were high or moderately high. (There does not appear to be any evidence at this time to document any significant correlation between administrators' ratings of effectiveness of therapy and their perceptions of the caseload level of therapists.)

Therapists typically have caseloads ranging in size from 35 to 45 students. Of those therapists who left their positions, 76% indicated their caseloads were between 21 and 50 students, and almost 50% reported caseload levels of between 31 and 40 students. The average related service caseload reported by speech therapists on their monthly reports was 21 special education students; ranging from 4 to 66 students. Related service caseloads are estimated to be one half of the total speech therapy caseload. Speech impaired students comprise the other half. The estimated average caseload size of physical therapists was 39 students. The estimated caseload size of occupational therapists was 41 students.

Clearly there is a great deal of variability in therapist caseloads. Although a number of therapists advocate the adoption of some kind of standard caseload, there does not appear to be a consensus in this regard. Caseload levels vary because therapists provide services in a variety of conditions to a diverse population. One therapist in a rural environment providing services to schools that are miles apart may spend a great deal of time "on the road" thereby minimizing time available to provide services. The caseload of another therapist may consist of students who require a significant number of direct therapy sessions per week. A third therapist may provide services to students in group settings.

Preservice and Inservice Training

Although professional training of related service providers generally appears to be adequate, a consistent theme in many of the studies has been the lack of available inservice programs to assist related service professionals in developing skills to more effectively and efficiently provide therapeutic services. Only 37% of those therapists who had left their positions felt that inservice training had been helpful to them. Participants at the Futures-Oriented Planning Conference also identified the scarcity of local inservice training programs and a relative lack of local professional resources as conditions hindering the effective provision of services. A dearth of publicity and insufficient time available for related service professionals to receive inservice training were also issues of concern.

One third of speech therapists indicated they had received inservice training to assist them in providing effective consultation services. On the other hand, almost two thirds of Department of Health employees had received such training. Less than one fourth of special education teachers have received inservice training on the consultation model. Almost two thirds of responding related service providers expressed a need for additional training on the consultation model of service delivery.

Consultation Services

Related service professionals and special education teachers were surveyed for their perceptions of the consultation model utilized by related service professionals. Generally, teachers appear to possess a greater understanding of the nature and purpose of consultation provided by occupational therapists, physical therapists and speech therapists than they do of consultation provided by mental health professionals. Also noted was an understanding of (a) the requirement of a spirit of collaboration between teacher and therapist, and (b) the need for the teacher to be an active participant in the decision making process.

Consultation is generally perceived to be an appropriate service model for related services and is thought to be of benefit to students, teachers, and therapists. However, some inconsistencies in responses regarding consultation services were noted. Although a spirit of collaboration is perceived to be necessary, over one half of the special education teachers and one third of the related service providers identified the consultant (the related service provider) as the expert who tells the teacher what to do. Also, although consultation is seen to be appropriate and beneficial, 40% of the special education teachers and 32% of the related service professionals indicated that consultation services are not as effective as direct services.

Speech therapists generally were critical of the effectiveness of the consultation services they provided. However, special education teachers often indicated that consultation services provided by speech therapists were effective. Teacher ratings of such services by other related service professionals were less positive.

Effectiveness of Related Services

Two methods were used to gather information on the generic effectiveness of related services, or more specifically on the effectiveness of actual programs used in related service areas. One method utilized by the Project obtained data from administrators and direct service providers on perceptions of the effectiveness of the services administered or provided. Generally, related services are perceived to be effective. Administrators did not differentiate between occupational therapy, physical therapy, and speech therapy in mean ratings of effectiveness. However, ratings of the perceived effectiveness of mental health services were consistently lower than the other three related service areas. It is also not clear whether other groups such as teachers, parents, principals, and counselors share similar perceptions. Further study is needed to examine the discrepancy in perceptions of the effectiveness of mental health services as opposed to other related services.

The second method involved a quasi-experimental evaluation of a Language Program utilized by speech therapists in one educational district. Conclusions regarding the Distar Language Program are not meant to apply on a generic level to speech therapy as a related service but are limited rather to the Distar Language Program specifically. Results suggest a need to develop additional evaluation studies to more completely examine the effectiveness of the Program in improving the oral language skills of learning disabled and mildly mentally retarded students. Definite conclusions regarding the effectiveness of the Program can not be made at this time, however, plans have been developed to follow-up on results on the study.

Problems exist, in attempting to compare the effectiveness of two or more distinct related service disciplines. The first difficulty rests in the diversity of populations served. These populations typically present their own unique problems and needs. The severity of such problems varies greatly. Secondly, each type of related service follows unique goals and objectives.

Areas In Need of Additional Inquiry

The AIRS Project examined a number of issues during its investigation of related services in Hawaii. A positive outcome of the Project has been the development of a foundation for further inquiry. The following areas deserve further investigation:

1. The extent to which high rates of turnovers and vacancies among related service professionals affects the frequency and nature of service provision.

2. Comparative studies of personnel change among similar professions in the private sector.

3. The impact of the quality of working conditions upon therapist morale and the quality of services provided.

4. Needs assessment of the number and type(s) of special education students requiring mental health services and the resources required to provide those services.

5. Factors accounting for variations in the nature, frequency, and duration of related service across handicapping conditions, and across districts.

6. The determination of those standardized instruments utilized in evaluations which possess the greatest degree of reliability and validity.

7. The extent to which variability in therapist recommendations for service exist.

Additional Recommendations

Recommendations regarding additional activities have already been identified in a number of the previous chapters. The following is a list of additional recommendations regarding the provision of related services in Hawaii.

1. Initiate collaborative efforts among appropriate State agencies to reduce the related service provider turnover rates.

2. Establish "exit interviews" for all related service personnel to routinely collect data on their reasons for leaving their positions, and their attitudes and opinions on such matters as: therapists caseload, working conditions, effectiveness and efficiency of the service delivery system, supervision, inservice training, and problems unique to Hawaii.

3. Initiate efforts to attract more qualified applicants to related service professional positions.

4. Expand inservice training programs to assist related service professionals to more effectively provide services.

5. Establish an effective yet flexible data management system to properly monitor and evaluate the extent to which related services are being provided.

6. Investigate the extent to which a uniform consensus on instruments and procedures to be utilized in evaluations can be built.

7. Initiate inservice training on guidelines and/or criteria regarding student need or eligibility for related services.

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TECHNICAL REPORTS PRODUCED BY AIRS PROJECT

Hawaii's Special Education Related Services: Statistics on Personnel Vacancies and Turnovers (Technical Report No. 85-07-101)

Related Services in Special Education: The Administrator's Perspective (Technical Report No. 86-01-102)

Related Services in Special Education: Service Providers' Views on Position Vacancies, Turnovers and Employment (Technical Report No. 86-01-103)

Statistics on Speech/Language Therapy as a Related Service in Hawaii, Spring, 1985 (Technical Report No. 85-07-201)

Related Services in Special Education: Summary Statistics on Occupational Therapy Services (Technical Report No. 86-07-202)

Related Services in Special Education: Summary Statistics on Physical Therapy Services (Technical Report No. 86-07-203)

Technical Report on Interviews with Related Service Personnel Regarding Evaluations and Recommendations (Technical Report No. 85-11-301)

Related Service Provider Perceptions of Consultation Services Provided to Special Education Students (Technical Report No. 86-02-302)

Special Education Teacher Perceptions of Consultation Services Provided by Related Service Professionals (Technical Report No. 86-02-303)

Evaluation of the DISTAR Language Program in Maui District (Technical Report No. 86-05-401)

Appendix C

STATE AND DISTRICT ADMINISTRATORS QUESTIONNAIRE
RELATED SERVICES EMPLOYMENT VACANCIES AND TURNOVERS

Instructions

Most of the following questions require a simple mark to indicate your answer. A few items prompt you to describe your response briefly so a more accurate description of your thoughts and perceptions may be obtained.

Respondent Information

1. Agency where employed: ________________________________

2. Your position title: ________________________________

(Please check one)
☐ State level
☐ District/catchment area level
☐ School level

3. Position status : ☐ Permanent ☐ Temporary

4. Length of employment in present position: ________ years ______ months

---

Items 5-8 require you to circle the number that corresponds to your rating of each of the four related services listed.

---

5. How effective are direct services in assisting DOE special education students in meeting IEP objectives? (Circle your rating for each row)

	very ineffective			average			very effective
a. Occupational Therapy	1	2	3	4	5	6	7
b. Physical Therapy	1	2	3	4	5	6	7
c. Speech Therapy	1	2	3	4	5	6	7
d. Mental Health Services	1	2	3	4	5	6	7

6. Please rate the overall quality of the training and preparation received by personnel presently providing related services to Hawaii's special education students.

	very low quality			average			very high quality
a. Occupational Therapy	1	2	3	4	5	6	7
b. Physical Therapy	1	2	3	4	5	6	7
c. Speech Therapy	1	2	3	4	5	6	7
d. Mental Health Services	1	2	3	4	5	6	7

7. In your opinion, has the overall quality of related services provided to Hawaii's special education population in the last five years improved, worsened, or remained about the same? (Check one for each row)

	Improved	Worsened	Remained the same
a. Occupational Therapy	☐	☐	☐
b. Physical Therapy	☐	☐	☐
c. Speech Therapy	☐	☐	☐
d. Mental Health Services	☐	☐	☐

8. How available have service providers been in providing required related services?

	always unavailable			average			always available
a. Occupational Therapy	1	2	3	4	5	6	7
b. Physical Therapy	1	2	3	4	5	6	7
c. Speech Therapy	1	2	3	4	5	6	7
d. Mental Health Services	1	2	3	4	5	6	7

Items 9 and 10 pertain to personnel information recently obtained from the Department of Health. Two conclusions may be drawn from results of the personnel study. First, there appears to be some degree of difficulty in filling all position vacancies in occupational and physical therapy, clinical psychology and psychiatric social work. Secondly, the turnover rate of therapists and mental health personnel indicates a high level of personnel movement and instability.

---

9. In your opinion, what factors might be the major contributors to the difficulty experienced in filling position vacancies in occupational therapy and physical therapy? ______________________________
____
____
____

10. In your opinion, what factors might be the major contributors to the high level of turnovers currently observed in occupational therapy and physical therapy? ______________________________
____
____
____

Caseload

11. With regards to caseload, what is your perception of the typical caseload for the following related services areas?

a. Occupational Therapists/Aides
- ☐ High
- ☐ Moderate - High
- ☐ Moderate
- ☐ Moderate - Low
- ☐ Low
  - ☐ Not Sure

b. Physical Therapists
- ☐ High
- ☐ Moderate - High
- ☐ Moderate
- ☐ Moderate - Low
- ☐ Low
  - ☐ Not Sure

c. Speech Therapists
- ☐ High
- ☐ Moderate - High
- ☐ Moderate
- ☐ Moderate - Low
- ☐ Low
  - ☐ Not Sure

d. Clinical Psychologists
- ☐ High
- ☐ Moderate - High
- ☐ Moderate
- ☐ Moderate - Low
- ☐ Low
  - ☐ Not Sure

e. Psychiatric Social Workers
- ☐ High
- ☐ Moderate - High
- ☐ Moderate
- ☐ Moderate - Low
- ☐ Low
  - ☐ Not Sure

Needed Research

12. In your opinion, what areas do you feel are in need of study and/or improvement? (Check all that apply)

- ☐ Related service delivery systems
- ☐ Measures of effectiveness (outcome measures) in related services
- ☐ Budget allocations
- ☐ Salary levels
- ☐ Promotion practices
- ☐ Service equity
- ☐ Recruitment of qualified related services personnel
- ☐ Retainment of qualified related services personnel
- ☐ Other: ____________________
- ☐ Other: ____________________

13. What changes do you feel should be made to improve related services provided to Hawaii's special education population?

____
____
____
____
____

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Thank you very much!

AIRS Project
c/o Special Education Section
3430 Leahi Ave.
Honolulu, Hawaii 96815

Ph. (808) 737-3720

Please return by October 15, 1985

Appendix D

THERAPISTS/AIDES QUESTIONNAIRE
RELATED SERVICES EMPLOYMENT VACANCIES AND TURNOVERS

Instructions:

Most of the following questions require a simple mark to indicate your answer. A few items prompt you to describe your response briefly so that we may obtain a more accurate description of your opinions and thoughts.

A. Your current position title ______________________

1. Your previous position title (check one):

☐ Physical Therapist
☐ Physical Therapy Aide
☐ Occupational Therapist
☐ Occupational Therapy Aide (COTA)
☐ Speech Pathologist
☐ Communication Aide
☐ Clinical Psychologist
☐ Psychiatric Social Worker

Position level (for example, Physical Therapist II, Speech Pathologist IV, etc.) ______________________

2. Previous position status (check one): ☐ Permanent ☐ Temporary

(check one): ☐ Full-Time ☐ Part-Time

3. Your Department:

☐ Department of Health
Catchment Area: __________

OR

☐ Department of Education
District: __________

4. State of legal residence prior to employment in career/occupation identified in "previous position" (question #1) above? (for example, California, Hawaii, New York, etc.) ______________________

5. Date of Termination __________ (month), __________ (year)

6. Length of employment in the above previous position:

☐ 6 months or less
☐ between 6 months, 1 day to 1 year
☐ between 1 year, 1 day to 2 years
☐ between 2 years, 1 day to 3 years
☐ between 3 years, 1 day to 4 years
☐ between 4 years, 1 day to 5 years
☐ over 5 years

7. What was your primary reason for leaving your previous position?
____
____

8. Other reasons for leaving your previous position?
____
____

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For items 9-14, circle the number that corresponds to your answer.

9. Considering your employment in the previous position overall, how satisfied were you with the job? (circle appropriate number):

not satisfied at all			neutral			very satisfied
1	2	3	4	5	6	7

10. How satisfying was your relationship with other therapists/clinicians?

not satisfying at all			neutral			very satisfying
1	2	3	4	5	6	7

11. How satisfying was your relationship with your supervisor(s)?

not satisfying at all			neutral			very satisfying
1	2	3	4	5	6	7

12. How rewarding was your relationship with your clients?

Not rewarding at all			neutral			Very Rewarding
1	2	3	4	5	6	7

13. How much control or influence did you feel you had in your daily decision making or routine delivery of services?

No control or influence			neutral			total control or influence
1	2	3	4	5	6	7

14. How much influence or control do you feel the human environment (including supervisors, other staff members, parents, etc.) had on your daily delivery of services?

No control or influence			neutral			total control or influence
1	2	3	4	5	6	7

15. How much influence or control do you feel the physical environment (including facilities, geographical locations, etc.) had on your daily delivery of services?

No control or influence			neutral			total control or influence
1	2	3	4	5	6	7

16. How adequate was your professional training in providing you with skills needed for your previous position?

Not adequate at all			neutral			very adequate
1	2	3	4	5	6	7

17. How helpful was the inservice training and support you received in providing quality services to special education students?

Not helpful at all			neutral			very helpful
1	2	3	4	5	6	7

18. What was your approximate typical caseload per week? ____________

19. On the average, how many sessions per week did you provide direct services? ____________

20. On the average, how many sessions per week did you provide direct services for each student? ____________

21. On the average, how long would you say the typical session (direct services) lasted? ____________ (minutes)

22. On the average, how many sessions per week did you provide consultative services (to parents, teachers, administrators?) ____________

What percent of the consultative services which you provided consisted of:

- consultation using demonstration with child/youth? ________%
- consultation using discussion only (describing, question-answer)? ________%

23. What changes do you feel should be made to improve therapy (evaluation, direct services or consultation) or mental health counseling services provided to Hawaii's special education handicapped population?
____
____
____
____

24. In your opinion, which measures or tests do you think would best serve as indices of effective therapy/counseling in your professional area? --(for example, range of motion, muscular strength, IEP objectives, tests that assess language, motor coordination, or mental health, etc.) ____
____
____
____
____

Thank you very much!

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APPENDIX E

INTERVIEW TO OBTAIN DATA ON EVALUATIONS AND RECOMMENDATIONS

POPULATIONS: Speech pathologists, occupational therapists, physical therapists, clinical psychologists .

QUESTIONS

DEMOGRAPHICS

1. What is your current position title?
   Speech pathologist II,III,IV   occupational therapist III,IV

   physical therapist III,IV

   clinical psychologist   10 Month Speech Therapist

2. How long have you worked for your current employer ?

3. How long have you been in your present position?

4. How long have you been in your current occupation?

5. In what district or catchment area do you work ?
   Honolulu   Leeward   Central

   Windward

6. What was your largest caseload at any one time in the 1984-85 school year (approximate numbers)?

   a. direct services _____   b. consultation services _____

   c. other_____   d. not applicable_____

7. Do you anticipate working in the same type of position for your employer next year?   yes   no   DK
   in five years ?   yes   no   DK   in ten years ?   yes   no   DK

THE EVALUATION

8. Do you conduct evaluations used to determine student need for related services ?
   yes   no

9. What instruments and/or procedures do you normally use in the course of your evaluation ?

a.____________________________________
b.____________________________________
c.____________________________________
d.____________________________________
e.____________________________________
f.____________________________________
g.____________________________________

10. Please define in your own words the need of a student for:
occupational therapy
physical therapy
speech/language therapy
mental health services

GUIDELINES OR CRITERIA FOR SERVICE

11. Are there published or explicitly established guidelines or criteria used for determining the type of service you provide or evaluate the need for ?

yes no

12. In your opinion is there a difference between guidelines and criteria regarding service delivery ?

13. Who has established such guidelines/criteria ?

14. When were they established ?

15. How were they established ?

16. How much flexiblity do you have in following the criteria/guidelines ?

17. Describe conditions under which you may deviate from criteria/guidelines .

VARIABILITY IN RECOMMENDATIONS

18. In your reports, is there a section for you to recommend that the student you evaluated should or should not be provided special education related services such as physical therapy, occupational therapy, speech/language therapy, or mental health services?

yes no

19. What is the basis upon which you make your recommendation for special education related services?

20. Given the following hypothetical situation, in your opinion, to what extent would recommendations for related service delivery vary from examiner to examiner? A student is evaluated by all your peers. Results from each evaluation are similar and the student exhibited the same behavior for each examiner.

21. In your opinion, if there is a variation what is the cause of the variation?

SERVICE DECISIONS

22. Do you provide provide input into or have any part in determining the frequency, nature and duration of related services ?

yes no

23. If so, what is your input or role?

24. Where is the decision made regarding the nature, frequency, and duration of service to be delivered ?

25. How is that decision made?

26. What are the factors in determining the frequency of service ?

27. What are the factors in determining the nature of service?

28. What are the factors in determining the duration of service?

REACTION FROM OTHERS TO RECOMMENDATIONS

29. Have you ever been required or pressured to modify your recommendations regarding the nature, duration, or frequency of service delivery ?

nature	yes	no
duration	yes	no
frequency	yes	no

30. How often has this occurred ?

nature	always	frequently	occasionally	seldom	never
frequency	always	frequently	occasionally	seldom	never
duration	always	frequently	occasionally	seldom	never

31. Who provides the pressure or requirements to change the recommendation?
parents supervisors teachers principals advocacy groups
others

IMPROVEMENT OF EVALUATIONS/RECOMMENDATIONS

29. Have you received any in-service training that helped you to improve your evaluations and recommendations regarding service to your students ?
yes no

Please provide a brief description of the topic of the in-service training.

30. What kind of assistance would be most valuable in helping you to improve your evaluations and recommendations?

31. What could you do to improve your evaluations and recommendations ?

TYPES OF RECOMMENDATIONS MADE

32. In your position, what types of recommendations do you normally make? 1) Determination of student need for services, 2) Type or nature of service to be provided, 3) Frequency of service to be provided, 4) Duration of service to be provided 5) others (please list)____

____

____

APPENDIX F

QUESTIONNAIRE ON TEACHER/THERAPIST CONSULTATION
RELATED SERVICE PROVIDERS

Current position title____

District________________________________

1. Length of employment in current occupation____________________________

2. How many students on your caseload currently are served through consultation? ____________________________

3. How many teachers receive consultation services from you during an average month? _______________

4. Do you feel you have an understanding of the nature and purpose of consultation provided to teachers?

yes ____ no ____

5. Do you feel that those with whom you consult have an understanding of the nature and purpose of consultation?

yes ____ no ____

6. What is the average length of time you spend in each period of consultation with teachers? ___________________

7. For each of the following statements indicate whether you strongly agree (SA), agree (A), disagree (D), or strongly disagree (SA) by circling the appropriate letter(s) after each statement.

CONSULTATIVE SERVICES EMPLOYED BY RELATED SERVICE PROFESSIONALS:

a) provide therapeutic services indirectly to the student through the teacher:	SA....A....D....SD
b) requires a spirit of collaboration between the teacher and therapist:	SA....A....D....SD
c) requires a teacher to be an active participant in the decision-making process:	SA....A....D....SD
d) requires data collection and analysis as an essential part of the process of consultation:	SA....A....D....SD
e) involves the consultant as an "expert" who tells the teacher what to do:	SA....A....D....SD
f) is an appropriate service model for related services:	SA....A....D....SD
g) are often a waste of teacher/therapist time:	SA....A....D....SD
h) are often as effective as direct services:	SA....A....D....SD
i) are often of benefit to students:	SA....A....D....SD
j) are often of benefit to teachers:	SA....A....D....SD
k) are often of benefit to therapists:	SA....A....D....SD

FOR ITEMS 8 TO 12, CIRCLE THE APPROPRIATE NUMBER
THAT CORRESPONDS TO YOUR ANSWER

8. Generally, how satisfied are you with the consultation services you provide to teachers?

very dissatisfied   dissatisfied   satisfied   very satisfied
1.......2.........3.........4..........5..........6........7..........8

9. Generally, how effective are the consultation services you provide to teachers?

very ineffective   ineffective   effective   very effective
1.......2........3..........4...........5.........6........7..........8

10. Generally, how satisfied are parents with the consultation model used by members of your profession?

very dissatisfied   dissatisfied   satisfied   very satisfied
1.......2.........3.........4..........5..........6........7..........8

11. Generally, how satisfied are teachers with the consultation model used by members of your profession?

very dissatisfied   dissatisfied   satisfied   very satisfied
1.......2.........3.........4..........5..........6........7..........8

12. What is your perception of the ability of teachers to whom you provide consultation to carry through with ideas and suggestions or to benefit from consultation?

below average   average   above average   excellent
1.......2.........3.........4..........5..........6........7..........8

13. Have you ever taken any college courses which have prepared you to consult with teachers?
yes _____   no _____

14. Has the Department of Health or the Department of Education provided you with any inservice training on consultation?
Department of Health   Department of Education
yes ____   no ____   yes ____   no ____

15. Do you feel you need additional training to help you more effectively provide consultation services?
yes ____   no ____

16. On a scale from 1 to 8 with 8 being extremely helpful and 1 being not helpful, rate the helpfulness of the following activities that may occur during consultation. If an activity does not occur during consultation, indicate so by writing N/A where you would provide a rating.

______a) you provide information that is specifically requested
______b) you provide the teacher with information or materials which you feel is potentially useful but which has not been requested
______c) you provide a diagnosis or analysis of a specific student's problems
______d) you provide recommendations you feel the teacher can implement to remediate a specific problem
______e) you recommend ways to improve the learning environment of the classroom
______f) discussion on the appropriate methods used for data collection to analyze a student's problem or to assess effectiveness of activities/methods used to remediate problems
______g) general discussion of appropriate materials that can be used in the classroom
______h) explanation of referral criteria to receive services you provide
______i) demonstration of appropriate therapeutic/remedial techniques to be used in the classroom
______j) teacher provides ideas or suggestions on materials/techniques or activities to implement to remediate a student's problem
______k) establishment of an oral or written agreement that specifies mutually acceptable roles and responsibilities in consultation.
______l) other (please specify)

____
____

17. What types of children benefit most from consultation services you provide?

____
____

18. What types of children benefit least from consultation services you provide?

____
____

19. How might consultation services between teachers and related service providers be improved?

____
____
____

Thank you very much.

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Please return by December 13, 1985

APPENDIX G

QUESTIONNAIRE ON TEACHER/THERAPIST CONSULTATION
TEACHERS

Current position title ______________________________

District ________________

1. Length of employment in current occupation ________________________

2. How many of your students are served through consultation provided by a
    - speech/language therapist ____________
    - occupational therapist ____________
    - physical therapist ____________
    - clinical psychologist ____________
    - psychiatric social worker ____________

3. This year have you received consultation services from a
    - speech/language therapist yes _____ no _____
    - occupational therapist yes _____ no _____
    - physical therapist yes _____ no _____
    - clinical psychologist yes _____ no _____
    - psychiatric social worker yes _____ no _____

4. In an average month, how many times do you receive consultation from a
    - speech/language therapist ___________________
    - occupational therapist ___________________
    - physical therapist ___________________
    - clinical psychologist ___________________
    - psychiatric social worker ___________________

5. Do you feel the following related service providers have an understanding of the nature and purpose of consultation provided to teachers?
    - speech/language therapists yes _____ no _____
    - occupational therapists yes _____ no _____
    - physical therapists yes _____ no _____
    - clinical psychologists yes _____ no _____
    - psychiatric social workers yes _____ no _____

6. Do you feel you have an understanding of the nature and purpose of consultation between you and:
    - speech/language therapists yes_____ no_____
    - occupational therapists yes_____ no_____
    - physical therapists yes_____ no_____
    - clinical psychologists yes_____ no_____
    - psychiatric social workers yes_____ no_____

7. What is the average length of time spent in each period of consultation with:

speech/language therapist ____________
occupational therapist ____________
physical therapist ____________
clinical psychologist ____________
psychiatric social worker ____________

8. For each of the following statements indicate whether you strongly agree (SA), agree (A), disagree (D), or strongly disagree (SD) by circling the appropriate letter(s) after each statement.

CONSULTATIVE SERVICES EMPLOYED BY RELATED SERVICE PROFESSIONALS:

a) provide therapeutic services indirectly to the student through the teacher:	SA.....A.....D.....SD
b) requires a spirit of collaboration between the teacher and therapist:	SA.....A.....D.....SD
c) requires a teacher to be an active participant in the decision-making process:	SA.....A.....D.....SD
d) requires data collection and analysis as an essential part of the process of consultation:	SA.....A.....D.....SD
e) involves the consultant as an "expert" who tells the teacher what to do:	SA.....A.....D.....SD
f) is an appropriate service model for related services:	SA.....A.....D.....SD
g) are often a waste of teacher/therapist time:	SA.....A.....D.....SD
h) are often as effective as direct services:	SA.....A.....D.....SD
i) are often of benefit to students:	SA.....A.....D.....SD
j) are often of benefit to teachers:	SA.....A.....D.....SD
k) are often of benefit to therapists:	SA.....A.....D.....SD

FOR ITEMS 9 TO 13, CIRCLE THE APPROPRIATE NUMBER
THAT CORRESPONDS TO YOUR ANSWER

9. Generally, how satisfied are you with consultation services provided by:

	very dissatisfied dissatisfied satisfied very satisfied
speech/language therapists	1.....2.....3.....4.....5.....6.....7.....8
occupational therapists	1.....2.....3.....4.....5.....6.....7.....8
physical therapists	1.....2.....3.....4.....5.....6.....7.....8
clinical psychologists	1.....2.....3.....4.....5.....6.....7.....8
psychiatric social workers	1.....2.....3.....4.....5.....6.....7.....8

10. Generally, how effective are the consultation services provided by:

	very ineffective		ineffective		effective		very effective	
speech/language therapists	1	2	3	4	5	6	7	8
occupational therapists	1	2	3	4	5	6	7	8
physical therapists	1	2	3	4	5	6	7	8
clinical psychologists	1	2	3	4	5	6	7	8
psychiatric social workers	1	2	3	4	5	6	7	8

11. Generally, how satisfied are parents with the consultation model utilized by related service providers?

very dissatisfied		dissatisfied		satisfied		very satisfied	
1	2	3	4	5	6	7	8

12. Generally, how satisfied are other teachers in your school with the consultation model utilized by related service providers?

very dissatisfied		dissatisfied		satisfied		very satisfied	
1	2	3	4	5	6	7	8

13. What is your perception of the ability of related service professionals to provide consultation services to you?

	below average		average		above average		excellent	
speech therapist	1	2	3	4	5	6	7	8
occupational ther.	1	2	3	4	5	6	7	8
physical therapist	1	2	3	4	5	6	7	8
clinical psych.	1	2	3	4	5	6	7	8
psych. soc. worker	1	2	3	4	5	6	7	8

14. Have you taken any college courses which have prepared you for or helped you to benefit from a consultation model of service delivery utilized by related service providers?

yes_____ no_____

15. Has the Department of Health or the Department of Education provided you with any inservice training on the consultation model of service delivery?

Department of Health yes____ no_____

Department of Education yes _____ no_____

16. Do you feel you need additional training to help you to benefit from consultation provided by related service professionals?

yes____ no_____

17. On a scale from 1 to 8, with 8 being extremely helpful and 1 being not helpful, rate the helpfulness of the following activities that may occur during consultation. If an activity does not occur during consultation, indicate so by writing N/A where you would provide a rating.

_____a) therapist provides information that you specifically request
_____b) therapist provides you with information or materials you have not solicited but the therapist feels might be helpful to you
_____c) therapist provides analysis or diagnosis of a specific student's problems
_____d) therapist provides recommendations on activities you can implement to remediate a specific problem
_____e) therapist recommends ways to improve the learning environment of your classroom
_____f) discussion on the appropriate methods used for data collection to analyze a student's problem or to assess effectiveness of activities/methods used to remediate problem
_____g) general discussion of appropriate materials that can be used in the classroom
_____h) explanation of referral criteria to receive services provided by therapist
_____i) demonstration of appropriate therapeutic/remedial techniques to be used in the classroom
_____j) you provide ideas or suggestions on materials/techniques or activities to implement to remediate student's problem
_____k) establishment of an oral or written agreement that specifies mutually acceptable roles and responsibilities in consultation.
_____l) other (please specify)
____
____

18. Do you provide suggestions or ideas during consultation with:

speech/language therapist	never	sometimes	usually	always
occupational therapist	never	sometimes	usually	always
physical therapist	never	sometimes	usually	always
clinical psychologist	never	sometimes	usually	always
psychiatric social worker	never	sometimes	usually	always

19. What types of children benefit most from consultation services provided to you by the:

speech language therapist______________________________
occupational therapist ______________________________
physical therapist ______________________________
clinical psychologist ______________________________
psychiatric social worker______________________________

20. What types of children benefit least from consultation services provided to you by the:

- **speech language therapist**______________________________
- **occupational therapist** ______________________________
- **physical therapist** ______________________________
- **clinical psychologist** ______________________________
- **psychiatric social worker**______________________________

21. How might consultation services between teachers and related service providers be improved?

____

____

____

____

Thank you very much.

Please enclose in the attached self-addressed envelope and mail to:

AIRS Project
c/o Special Education Section
3430 Leahi Ave.
Honolulu, Hawaii 96815

phone 737-3720

Please return by December 13, 1985

Appendix H

LIST OF ABBREVIATIONS FOR HANDICAPPING CONDITIONS

Eligibility Certification Code	Abbreviation	Handicapping Condition
01	MIMR	Mildly Mentally Retarded
02	MOMR	Moderately Mentally Retarded
03	SMR	Severely Mentally Retarded
04	PMR	Profoundly Mentally Retarded
05	LD	Learning Disabled
06	EH	Emotionally Handicapped
07	VI	Vision Impaired
08	BL	Blind
09	HI	Hearing Impaired
10	DF	Deaf
11A	OH	Orthopedically Handicapped
11B	OHI	Other Health Impaired
11C	OHI-A	Other Health Impaired-Autism
12	SI	Speech Impaired
13	DB	Deaf-Blind
14	SMH	Severely Multiply Handicapped
15	LI	Learning Impaired